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GETTYSBURG, PA.

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Pennsylvania College
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No. 1

GETTYSBURG COLLEGE LIBRARY,
GETTYSBURG, PA.

1913

JULY							SEPTEMBER							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	1	2	3	4	5	..	1	2	3	4	5	6	1
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13	14	15	16	17	18	19	14	15	16	17	18	19	20	9	10	11	12	13	14	15
20	21	22	23	24	25	26	21	22	23	24	25	26	27	16	17	18	19	20	21	22
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AUGUST							OCTOBER							DECEMBER						
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1914

JANUARY							MAY							SEPTEMBER						
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11	12	13	14	15	16	17	10	11	12	13	14	15	16	13	14	15	16	17	18	19
18	19	20	21	22	23	24	17	18	19	20	21	22	23	20	21	22	23	24	25	26
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FEBRUARY							JUNE							OCTOBER						
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MARCH							JULY							NOVEMBER						
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22	23	24	25	26	27	28	19	20	21	22	23	24	25	22	23	24	25	26	27	28
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APRIL							AUGUST							DECEMBER						
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1915

JANUARY							MARCH							MAY						
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FEBRUARY							APRIL							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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28	25	26	27	28	29	30	..	27	28	29	30

COLLEGE CALENDAR—1913-1914-1915**1913.**

September 8-9.	Monday and Tuesday, Entrance Examinations.
September 10.	Wednesday, 8 A. M., College Year begins.
November 26.	Wednesday, Noon, Thanksgiving Recess begins.
December 1.	Monday, Noon, Thanksgiving Recess ends.
December 19.	Friday, Noon, Christmas Recess begins.
December 30.	Tuesday, 10 A. M., Mid-Winter Meeting of Board of Trustees in Harrisburg.

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January 8.	Tuesday, 7.40 A. M., Christmas Recess ends.
February 2-6.	Monday to Friday, Examinations closing First Semester.
February 6.	Friday, Noon, First Semester ends and Second Semester begins.
April 7.	Tuesday, Founders' Day.
April 9.	Thursday, Noon, Easter Recess begins.
April 15.	Wednesday, 7.40 A. M., Easter Recess ends.
May 19.	Tuesday, Junior Latin Examination for Hassler Prize.
May 25-29.	Monday to Friday, Final Examinations of Senior Class.
June 1-5.	Monday to Friday, Examinations closing the year.
June 7.	Sunday, 10.45 A. M., Baccalaureate Sermon.
June 7.	Sunday, 7 P. M., Discourse before Y. M. C. A.

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Pennsylvania College

June 8-9.	Monday and Tuesday, Entrance Examinations.
June 9.	Tuesday, 9 A. M., Annual Meeting of Board of Trustees in Gettysburg.
June 9.	Tuesday, 9 A. M., Junior Oratorical Contest for Reddig Prize.
June 9.	Tuesday, 10 A. M., Senior Class Day Exercises.
June 9.	Tuesday, 3 P. M., Baseball Game, Gettysburg vs. Bloomsburg.
June 9.	Tuesday, 8-10 P. M., President's Reception.
June 10.	Wednesday, 10 A. M., Commencement Exercises.
June 10.	Wednesday, 1 P. M., Alumni Collation.

Summer Vacation

August 25.	Tuesday, 8 A. M., Summer Course in Surveying begins.
September 14-15.	Monday and Tuesday, Entrance Examinations.
September 16.	Wednesday, 8 A. M., College Year begins.
September 16.	Wednesday, 8 P. M., Y. M. C. A. Reception.
November 25.	Wednesday, Noon, Thanksgiving Recess begins.
November 30.	Monday, Noon, Thanksgiving Recess ends.
December 18.	Friday, Noon, Christmas Recess begins.
1915.	
January 5.	Tuesday, 7.40 A. M., Christmas Recess ends.
February 1-5.	Monday to Friday, Examinations closing First Semester.
February 5.	Friday, Noon, First Semester ends and Second Semester begins.
April 1.	Thursday, Noon, Easter Recess begins.
April 7.	Wednesday, 7.40 A. M., Easter Recess ends.
June 9.	Wednesday, Commencement.

HISTORICAL

The Charter of Pennsylvania College was approved April 7, 1832. The opening paragraphs are as follows:

WHEREAS, the literary and scientific institution in Gettysburg Adams county, in this Commonwealth, known by the name of Gettysburg Gymnasium, is resorted to by a large number of young men from different portions of this State, and elsewhere, and promises to exert a salutary influence in advancing the cause of liberal education, particularly among the German portion of our fellow citizens; therefore,

SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the Gettysburg Gymnasium be, and hereby is erected into a College, for the education of youth in the learned languages, the arts, sciences and useful literature.

SECTION 2. And be it further enacted by the authority aforesaid, That the style and title of said College shall be "Pennsylvania College of Gettysburg" and that it shall be under the management, direction and government of all the subscribers to the funds of said institution, by whose private contributions the said funds have been raised and its present edifice purchased, to wit: John B. McPherson, Thomas C. Miller, Thomas J. Cooper, Samuel Fahnestock, Samuel S. Schmucker, Ernest L. Hazelius, David F. Schaeffer, John G. Morris, Benjamin Kurtz, William Heim, Charles P. Krauth, Frederick D. Schaeffer, J. George Schmucker, J. F. Heyer, Jacob Martin, Abraham Reck, William Ernst, Jacob Medtard, Lewis Eichelberger, Michael Meyerheffer, Jonathan Ruthrauff, Jacob Crigler, John F. Macfarlane, Robert Goodloe Harper, John Herbst, and their successors, to be elected as hereinafter mentioned.

In SECTION 4 we read: And at elections either for patrons, or trustees, or teachers, or other officers, and in the reception of pupils, no person shall be rejected on account of his conscientious

persuasion in matters of religion, provided he shall demean himself in a sober manner, and conform to the rules and regulations of the College.

Two unique features in the establishment of colleges appear in the foundation of this College. First, the College in a large measure grew out of the necessity of properly preparing men for the Theological Seminary, established in 1826 at Gettysburg. This purpose has never lessened and to-day the institution regards this as an important feature of its work and offers special opportunities to young men preparing themselves for theological studies. Pennsylvania College in its beginnings, its history, and its purpose is closely identified with the Lutheran Church.

The other feature is thus stated in the charter:

In addition to the customary professorships in other colleges, there shall be in this institution a German professorship, the incumbent of which shall, in addition to such other duties as may be assigned him by the board, instruct such young men as may resort to the institution for the purpose of becoming qualified to be teachers of those primary schools, in which according to the Act passed last session, both German and English are to be taught.

While for a number of years there has been no demand for the teaching of German in elementary schools, the College has given prominence to instruction in the German language and literature and has made a specialty of preparation for the teaching profession. Thus in the foundation of the College the demands of the times were carefully considered and ever since the aim has been to meet the special educational needs of our people.

Among the founders of the College special mention should be made of S. S. Schmucker, D.D., Professor in the Theological Seminary at Gettysburg, who was the directing spirit in changing the Gettysburg Gymnasium into a College and who presided unofficially over the College for two years. In the State Legislature were a number of friends of the College, prominent among them being Thaddeus Stevens, the father of the public school system of Pennsylvania. Several appropriations were made to

the College by the Legislature. This money was spent in the erection of the building known as Pennsylvania Hall.

The College began without endowment, with one small building (now a residence on the south-east corner of Washington and High streets), and a small attendance. But the wholesome enthusiasm of its able instructors, the loyalty and self-sacrifice of its officers, students, and alumni, and the devotion of its friends, have made its history down to the very present one of steady and continuous growth. Following is a list of the presidents of the College from its foundation to the present time:

1832-34, Samuel S. Schmucker, D.D., Founder.

1834-50, Charles Philip Krauth, D.D., First President.

1850-68, Henry L. Baugher, D.D., Second President.

1868-84, Milton Valentine, D.D., Third President.

1884-04, Harvey W. McKnight, D.D., LL.D., Fourth President

1904-10, Samuel G. Hefelbower, D.D., Fifth President.

1910- William A. Granville, Ph.D., LL.D., Sixth President.



LOCATION

Gettysburg is situated in the beautiful rolling area of the red shale belt of Pennsylvania, with its ridges of intrusive rock. A few miles west is the South Mountain ridge of the Blue Mountains. The situation is healthy and there is a good supply of filtered water. The town is readily reached from all directions by the Philadelphia and Reading and the Western Maryland Railways, which connect at Harrisburg, Pa., and Baltimore, Md. with the great railway systems of Pennsylvania and the South. Washington, Baltimore, Harrisburg, York, Hagerstown, Chambersburg, Carlisle and other important centers are also connected with Gettysburg by unusually good roads making it a very important automobile tourist center. The Coast to Coast Lincoln Way passes through Gettysburg.

The historic association of Gettysburg with the Civil War gives the locality great additional interest. The events of the Battle of Gettysburg are recorded in inscriptions on over four hundred monuments and markers, many of these being of large size and of great artistic merit. The United States Battlefield Commission has made the field accessible by over forty miles of very fine avenues along which are the markings which show the battle lines. Miles of the rifle pits and other intrenchments have been preserved as well as scores of lunettes. Here also is the National Cemetery where Lincoln made his memorable dedicatory speech. Among the thousands of travelers visiting the field are many men of national prominence who often speak to the student body. Such surroundings must develop a love of our united country and inspire to better citizenship.

The college buildings were all used as hospitals during and after the Battle of Gettysburg, and the Fiftieth Anniversary of the Battle of Gettysburg Commission established its headquarters on the college campus, July 1st to 4th, 1913.

BOARD OF TRUSTEES

Elected

1873.	Hon. George Ryneal, Jr.....	Martinsburg, W. Va
1890.	Hon. Samuel S. McC. Swope*.....	Gettysburg
1890.	William H. Dunbar, D.D.*.....	Baltimore, Md.
1892.	Thomas C. Billheimer, D.D.*.....	Gettysburg
1893.	John Wagner, D.D.*.....	Hazleton
1896.	John B. McPherson, Esq.....	Boston, Mass.
1897.	John Jacob Young, D.D.....	New York, N.Y.
1897.	William A. Shipman, D.D*.....	Johnstown
1898.	Henry C. Picking.....	Gettysburg
1899.	Charles F. Stifel.....	Pittsburgh
1899.	Henry H. Weber, D.D.....	York
1902.	Charles Baum, M.D., Ph.D.....	Philadelphia
1905.	Milton H. Valentine, D.D.....	Philadelphia
1906.	Samuel G. Hefelbower, D.D.....	Cambridge, Mass.
1906.	George E. Neff, Esq.....	York
1907.	Luther P. Eisenhart, Ph.D.....	Princeton, N. J.
1907.	Martin H. Buehler.....	Baltimore, Md.
1907.	Hon. R. William Bream.....	Gettysburg
1907.	Frederick H. Bloomhardt, M.D.....	Altoona
1907.	Alpheus Edwin Wagner, D.D.....	Gettysburg
1908.	William J. Gies, Ph.D.*.....	New York, N. Y.
1908.	William L. Glatfelter.....	Spring Grove

*Designated as Alumni Trustees, having been elected on nomination by the Alumni Association.

1908.	Frank E. Colvin, Esq.....	Bedford
1908.	John F. Dapp.....	Harrisburg
1908.	George B. Kunkel, M.D.....	Harrisburg
1908.	Jacob A. Clutz, D.D.....	Gettysburg
1910.	William A. Granville, Ph.D., LL.D.....	Gettysburg
1910.	Charles J. Fite.....	Pittsburgh
1910.	Burton F. Blough.....	Harrisburg
1912.	Charles H. Boyer	Chicago, Ill.
1912.	Winslow S. Pierce, Esq.....	New York, N. Y.

Officers

President.....	John F. Dapp
Vice President.....	Hon. Samuel McC. Swope
Secretary and Treasurer.....	Henry C. Picking

STANDING COMMITTEES OF THE BOARD

Executive Committee

	Term Expires
Milton H. Valentine, D.D., Chairman.....	1915
Thomas C. Billheimer, D.D.....	1914
Henry C. Picking.....	1918
Jacob A. Clutz, D.D.....	1917
William L. Glatfelter.....	1916
John F. Dapp.....	Ex-officio
William A. Granville, Ph.D., LL.D.....	Ex-officio

Finance Committee

Hon. Samuel McC. Swope, Chairman.
Henry C. Picking
Hon. R. William Bream
Thomas C. Billheimer, D.D.
William A. Granville, Ph.D., LL.D.

Committee on Honorary Degrees

William A. Granville, Ph.D., LL.D., Chairman.

William H. Dunbar, D.D.

Thomas C. Billheimer, D.D.

John Wagner, D.D.

George B. Kunkel, M.D.

Building Committee

William A. Granville, Ph.D., LL.D., Chairman.

Henry C. Picking

George E. Neff, Esq.

Alpheus E. Wagner, D.D.

Burton Frank Blough .

John F. Dapp, Ex-officio

College Infirmary Committee

George B. Kunkel, M.D., Chairman.

Charles Baum, M.D., Ph.D.

Frederick H. Bloomhardt, M.D.

Committee on Charter

Jacob A. Clutz, D.D., Chairman.

William H. Dunbar, D.D.

Samuel G. Hefelbower, D.D.

Frank E. Colvin, Esq.

John F. Dapp

THE FACULTY

- WILLIAM ANTHONY GRANVILLE, PH.D., LL.D. 3 Campus
President.
- HARVEY WASHINGTON MCKNIGHT, D.D., LL.D. 204 Carlisle St.
President Emeritus
- JOHN ANDREW HIMES, LITT.D. 130 Carlisle St.
Graeff Professor of English Literature and Political Science
- REV. PHILIP MELANCHTHON BIKLE, PH.D. 2 Campus
Dean and Pearson Professor of the Latin Language and Literature
- EDWARD SWOYER BREIDENBAUGH, Sc.D. 227 Carlisle St.
Ockershausen Professor of Chemistry and Mineralogy
- GEORGE DIEHL STAHLEY, A.M., M.D. 200 Springs Avenue
Dr. Charles H. Graff Professor of Biology and Hygiene
- HENRY BARBER NIXON, PH.D. 1 Campus
Alumni Professor of Mathematics and Astronomy
- REV. CHARLES HENRY HUBER, A.M. 411 Carlisle St.
Principal of Stevens Hall and Professor of Latin and English
- KARL JOSEPH GRIMM, PH.D. 228 Carlisle St.
Professor of the German Language and Literature
- REV. CHARLES FINLEY SANDERS, A.M. 97 Springs Avenue
William Bittinger Professor of Philosophy and Education.
- LOUIS ALEXANDER PARSONS, PH.D. 217 Springs Avenue
Professor of Physics
- RICHARD SHELTON KIRBY, C.E. 207 Springs Avenue
Burton F. Blough Professor of Civil Engineering

M. STEWART MACDONALD, PH.D.

Professor of Economics and Political Science.*

HENRY ROBINSON, SHIPHEED, PH.D.

Professor of English.*

REV. ABDEL ROSS WENTZ, A.M.

88 Theological Seminary

Acting Amanda Rupert Strong Professor of English Bible and

Professor of History

BENJAMIN FRANKLIN SCHAPPELLE, A.M.

143 Springs Avenue

Acting Professor of the Romance Languages and Literatures

ALBERT BILLHEIMER, A.M.

108 Springs Avenue

Acting Franklin Professor of the Greek Language and Literature

CLYDE BELL STOVER, A.M.

24 E. Lincoln St.

Instructor in Chemistry

JAMES ALLEN DICKSON, A.M.

149 Chambersburg St.

Assistant in Chemistry

FRED GALLAGHER TROXELL, A.M.

27 Hanover St.

Assistant in Mathematics

FRANKLIN WATTLES MOSER, A.M.

153 Carlisle St.

Assistant in English

T. DARMAN SMITH, B.S.

143 Springs Avenue

Assistant in Engineering

PAUL SNYDER CREAGER, A.B.

308 N. Stratton St.

Assistant in Physics

MILES HENRY KRUMBINE, A.B.

85 Theological Seminary

Assistant in Philosophy

RALPH MONTINEAU WEAVER

66 W. High St.

Assistant in Physics

SPURGEON MILTON KEENY

Room 418

Assistant in English

*Beginning September, 1914.

ADOLPH CHARLES WEIDENBACH Assistant in German	23 Stevens Hall
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HENRY WOLF BIKLE, A.M., LL.B. Lecturer on Constitutional Law	Philadelphia
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REV. ABRAHAM B. VAN ORMER, PD.D. Extension Lecturer on Educational Topics	Shippensburg
--	--------------

HON. DONALD PAXTON MCPHERSON, A.M., Esq. Lecturer on Commercial Law	250 Carlisle St.
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PROF. A. C. ARMSTRONG, PH.D. Stuckenberg Lecturer on Sociology	Middletown, Conn.
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GEORGE MICHAEL RICE, A.M. Vice Principal of Stevens Hall and Instructor in German and Greek	213 Springs Avenue
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E. DURBIN OTT, A.B. Instructor in Mathematics and Science in Stevens Hall	42 Stevens Hall
--	-----------------

DOYLE REVERE LEATHERS, B.S. Instructor in Latin and English in Stevens Hall	16 Stevens Hall
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Additional Officers and Employees

EDWARD SWOYER BREIDENBAUGH, Sc.D. Curator of Museum	227 Carlisle St.
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KARL JOSEPH GRIMM, PH.D. Librarian	228 Carlisle St.
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REV. ABDEL ROSS WENTZ, A.M. Chaplain	88 Theological Seminary
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REV. SAMUEL FRANK SNYDER, A.M. Assistant to the President	233 Washington St.
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HENRY C. PICKING, A.M. Treasurer	Office, Gettysburg National Bank
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CLYDE B. STOVER, A.M. Registrar and Secretary of the Faculty	24 E. Lincoln St.
DOYLE REVERE LEATHERS, B.S. Physical Director, Track and Basketball Coach	16 Stevens Hall
MISS SALLIE P. KRAUTH Assistant Librarian	3 Baltimore St.
MISS MARY HAY HIMES, A.M. Preceptress in Stevens Hall	130 Carlisle St.
MISS RACHEL GRANVILLE Secretary to the President	3 Campus
HARRY HURSH BEIDELMAN, A.B. College Y. M. C. A. Secretary	51 Theological Seminary
J. L. MAUTHE, B.S. Football Coach	Du Bois
IRA PLANK Baseball Coach	Gettysburg
CARL CHESTON DREIBELBIS Proctor in South College	Room 331 S.
GEORGE HARRISON SCHAEFFER Proctor in Pennsylvania Hall	Room 211 M.
JOHN B. HAMILTON Superintendent of Buildings and Grounds	128 Washington St.
JOHN C. HAMILTON Engineer and Watchman	205 Buford Avenue
EDWARD ZINCAN Fireman and Watchman	29 Mummasburg St.

MRS. MARY D. MENCHEY
Janitress

3 W. Breckinridge St.

ROBERT WISLER
Janitor

4 Campus

JOSEPH ZINCAN
Janitor

29 Mummasburg St.

Committees of the Faculty

Class Officers.

Senior Class	Professor Stahley
Junior Class	Professor Sanders
Sophomore Class	Professor Nixon
Freshman Class	Professor Wentz

Entrance.—Dean Bikle, Professors Nixon and Grimm.

Library.—President Granville and Professor Grimm.

Bulletin.—Professors Wentz, Himes, Parsons and Huber, President Granville, ex-officio.

Hour Schedule.—Professors Breidenbaugh and Grimm.

Students' Publications.—Professors Sanders, Grimm and Dean Bikle.

Supervision of Finance of Students' Publications.—Dean Bikle, Professors Himes and Breidenbaugh.

Lectures.—Dean Bikle and Professor Wentz.

Advanced Degrees.—Professors Grimm, Bikle and Stahley.

Representative on Athletic Council.—Professor Billheimer.

Supervision of Social Functions.—Professor Kirby and Dean Bikle.

ATHLETIC COUNCIL

Active Members

Albert Billheimer, '06, Faculty Representative, Chairman.
John F. Dapp, ex-'89, Board Representative.
Harry L. Stahler, '82, Alumni Representative.
Arthur E. Rice, '04, Alumni Representative, Treasurer.
Glenn F. Poffinberger, '14, Student Representative, Secretary.
Clyde A. Fasick, '14, Ex-officio, President of the College Athletic Association.

Advisory Members

Franklin W. Moser, '07, Graduate Athletic Manager.
Doyle R. Leathers, '13, Physical Director.

STUDENT COUNCIL—1913-14

George Habermen, '14, President.
Frank Kramer, '14, Vice President.
D. F. Ikeler, '15, Corresponding Secretary.
F. B. Wickersham, '15, Recording Secretary.
R. J. Wolf, '14, Treasurer.
S. K. Spicher, '14, Marshall.
W. R. Hashinger, '15.
W. V. Garrett, '16.
I. R. Mayers, '16.
L. C. Schaeffer, '17, Messenger.

ADMISSION

Applicants for admission are required to present evidence of a good moral character. Applicants from other schools must present certificates of good standing and regular dismissal from the institutions which they have left. No distinctions are made as to sex except that only male students are admitted to the college dormitories. Women students may secure first-class accommodations in the town with good families and at very reasonable rates by writing to the Registrar.

Methods of Admission

Entrance examinations are held on the Monday and Tuesday preceding the opening of the college year and on the Monday and Tuesday of Commencement Week. The method of admission is either by examinations or by certificates from approved secondary and high schools or from private instructors. Such certificates should state the amount of work done in, and the time given to each subject, together with the grades received. Blank admission certificates may be obtained from the Registrar on request. These certificates should be filled out and returned to the Registrar as early as possible before the opening of the college year. The Entrance Committee passes on all applications for admission.

Each applicant for admission should call on the Registrar before or at the opening of College, pay the Registration Fee of \$5.00, be informed as to the action of the Entrance Committee, receive matriculation blanks and be instructed in the manner of filling them out.

To receive the full advantages of a college course a thorough entrance preparation is indispensable. Students insufficiently prepared for the class they enter do not generally make satisfactory progress in their work.

Subjects for Admission

The subjects to be presented for admission to the Freshman Class are divided into two groups as outlined below, from which a total of 15 units is necessary for entrance.

The subjects of Group A, comprising $5\frac{1}{2}$ units, are required of all students.

From Group B the applicant selects $9\frac{1}{2}$ units under the entrance requirements stated in connection with each group of college courses, see pages 27-29.

These units are all based on the recommendations of the National Conference on Uniform Entrance Requirements.

Group A—(Required of all Candidates)

English..... ..3 units

Mathematics.

A Algebra $1\frac{1}{2}$ unit

B Plane Geometry1 unit

Group B—(Elective)

*Greek.**

A Grammar and four books of Xenophon.....2 units

B Composition, three books of Homer, and
sight translation1 unit

Latin.

A Grammar and four books of Caesar.....2 units

B Composition and six books of Cicero.....1 unit

C Six books of Vergil.....1 unit

German.

Two years2 units

French.

Two years2 units

*See page 45 for Beginners' Greek in College.

Mathematics.

C	Advanced Algebra.....	1½ unit
D	Solid Geometry	1½ unit
E	Plane Trigonometry	1½ unit

Mechanical Drawing.

One year.....	1 unit
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History.

United States	1 unit
England	1 unit
Ancient	1 unit
Mediaeval	1 unit

<i>Geography, Political and Physical</i>	1 unit
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Chemistry.

One year with laboratory work.....	1 unit
One year without laboratory work.....	1½ unit

Physics.

One year with laboratory work.....	1 unit
One year without laboratory work.....	1½ unit

Botany.

One year with laboratory work.....	1 unit
One year without laboratory work.....	1½ unit

Zoology.

One year with laboratory work.....	1 unit
One year without laboratory work.....	1½ unit

NOTE.—Those offering college work for entrance will substitute other subjects during the college course. In special cases other subjects may be substituted for a portion of the above named entrance subjects.

ADMISSION SUBJECTS IN DETAIL

English

In English the study of the following books, recommended by the National Conference on Uniform Entrance Requirements. This is required for 1914-1915.

A Reasonable familiarity with the substance of the work:

The following are preferred, though alternatives are accepted: Shakespeare's *Merchant of Venice* and *Julius Caesar*; Addison's *Sir Roger de Coverley Papers*; Goldsmith's *Deserted Village*; Scott's *Ivanhoe* and *Lady of the Lake*; George Eliot's *Silas Marner*; Irving's *Sketch Book*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine* and *Passing of Arthur*; Ruskin's *Sesame and Lillies*.

B More careful and specific study:

Shakespeare's *Macbeth*; Milton's *Lycidas*, *Comus*, *L'Allegro* and *Il Penseroso*; Washington's *Farewell Address*; Webster's *First Bunker Hill Oration*; Carlyle's *Essay on Burns*.

The candidate will be required to present evidence of a general knowledge of the subject matter and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics designed to test the candidate's power of clear and accurate expression and will call for only a general knowledge of the substance of the books. Questions involving the essentials of English Grammar and the four fundamental principles of Rhetoric will be part of the examination.

No candidate will be accepted in English whose work is notably deficient in spelling, punctuation, idiom, or division into paragraphs.

Mathematics

A Algebra. The four fundamental operations for rational algebraic expressions; factoring, determination of the highest

common factor and least common multiple by factoring; fractions, involution, evolution, radicals and imaginary quantities. Equations of the first and second degree, ratio and proportion, progressions; binomial theorem for positive integral exponents, and permutations and combinations limited to simple cases.

B Plane Geometry. Five Books. Demonstration of theorems and constructions, including rectilinear figures, circles, proportional lines and similar figures; comparison and measurement of surfaces, including triangles, regular polygons and circles; maxima and minima; originals.

C, D, E The entrance requirements in Advanced Algebra, Solid Geometry and Plane Trigonometry are similar to the work done in these subjects in the College Courses as given on page 65. For advanced standing in Solid Geometry and Trigonometry, candidates must present note-books and other evidence of thorough work.

Mechanical Drawing

One year's work is required and the submission of the drawings done with a certificate from the instructor.

Political and Physical Geography

The requirement in Political Geography may be met by the study of any good text-book. The requirement in Physical Geography may be met by the study of any text-book equivalent to Gilbert and Brigham's Introduction to Physical Geography, Davis' Elementary Physical Geography or Tarr's New Physical Geography.

Greek

A1 Grammar. The candidate must have familiarized himself with the essentials of grammar, namely, the inflections of substantives and verbs; the syntax of cases, and of the moods and tenses of the verb; the simple rules for the composition and derivation of words; the structure of sentences with particular re-

gard to conditional and relative sentences, indirect discourse, and final clauses.

A2 Xenophon. The first four books of the *Anabasis*.

B1 Prose Composition. The requirements in prose composition involve the ability to translate into idiomatic Greek, continuous narrative based on Xenophon's *Anabasis*, Book II, and other Attic prose of similar difficulty. Due regard must be paid to the principles and practice of accentuation.

B2 Homer. The first three books of the *Iliad* (omitting II, 494-end) or of the *Odyssey*, including the Homeric forms, constructions and prosody.

B3 Sight Translation. One of the most important assets which a student can bring to the study of college Greek is the ability to read easily at sight passages of equal difficulty with the *Anabasis* or the *Hellenica*. For this purpose he should memorize as a working vocabulary, the principal words in Xenophon and the three books of Homer.

See page 45 for Beginners' Greek in College.

Latin

A1 Grammar. Allen and Greenough's preferred.

A2 Caesar's *Gallic War*, Books I-IV.

B1 Prose Composition, including the translation of English passages on Caesar and Cicero.

B2 Six Orations of Cicero, including at least two against Catiline, and the one for Archias, and the one for the Manilian Law.

C Vergil's *Aeneid*, Books I-VI, and so much prosody as relates to Latin versification in general and the dactylic hexameter in particular.

Equivalents will be accepted for work done in Sallust or Ovid or other authors of equal rank.

German

The requirements in German presuppose a systematic course extending over at least two years of school work.

The candidate is expected to be able to pronounce German clearly and distinctly. He must possess an accurate knowledge of the rudiments of grammar, and should have acquired an elementary German vocabulary. He should be able to translate easy prose and poetry, put into German simple English sentences taken from the language of every-day life and also easy selections from English narrative prose.

French

The requirements in French correspond to those in German and include the ability to pronounce French accurately, to read easy French prose, to put into French simple English sentences taken from the language of every-day life and easy selections from English narrative prose, and a good knowledge of the rudiments of French grammar.

History

A United States. Montgomery's *Leading Facts of American History*, or its equivalent.

B England. Walker's *Essentials of English History*, or its equivalent.

C Ancient. Myers' *Ancient History*, or its equivalent.

D Mediaeval and Modern. Myers' *Mediaeval and Modern History*, or its equivalent.

Chemistry

The candidate should have such knowledge of the general principles of the science and of the properties of the more important elements as may be obtained by a careful study of a text-book of the scope of Remsen's *Introduction to the Study of Chemistry*, Briefer Course.

The pupil should have performed in the laboratory experi-

ments in number and general character the equivalent of those given in Remsen's Introduction. The record of this work must be contained in a note book describing in the pupil's own words the materials used, the apparatus employed (with drawings), the changes occurring and the resulting products with the conclusions properly drawn from the phenomena observed.

This note book must be presented bearing the following endorsement by the instructor. "This note book is a true and original record of experiments actually performed by —— in —— school during the year ——."

Physics

A good high school course, using any standard high school text, covering the simple principles of Physics, descriptive and experimental rather than mathematical, including not less than three class periods and two hours of laboratory work per week for one year.

Botany

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to text-book and laboratory study of this subject with the aid of Bergen's Essentials of Botany or some other standard book of equal merit. Drawings and note books are required.

Zoology

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to this subject. Davison's Practical Zoology or any other standard book of equal grade will be accepted. Note books and drawings must accompany the certificate.

ADVANCED STANDING

A candidate for advanced standing must satisfy the entrance requirements and in addition must submit evidence of the satis-

factory character of the work for which advanced credit is asked. Blanks for such applications are furnished by the Registrar on request.

No one is admitted to the College after the beginning of the Senior year except by special action of the Faculty.

PARTIAL COURSE STUDENTS

Persons so situated that they are not able or do not wish to pursue a course of study leading to a degree are admitted as partial course students in such subjects as examination may show that the applicant is prepared to pursue with advantage. Such students must have not less than fourteen units of college work each week.

Students of the Theological Seminary are admitted to single courses in the college.

The Faculty may also admit to one or more single courses such applicants as have special qualifications for the subjects they desire to pursue.

THE GROUP SYSTEM OF COURSES

The courses of study in the College are arranged in ten groups. These groups are designed to be of equal value in the mental training of the student. This arrangement accomplishes several purposes. It enables the student to select those subjects which are of special value in preparation for subsequent professional study or business. In the first six groups it provides for a general training and broad culture which requires the student not to specialize but to concentrate a fair proportion of his time and energy on one or two related subjects. This gives a fuller training of the mental powers than results from a more diffused and often aimless selection of studies in a too largely elective system.

In addition to these groups of non-professional courses, groups have been established in Civil, Municipal, Mechanical and Electrical Engineering.

Each group of studies is described in detail on pages 30-39.

Value of a Period and of a Unit of College Work

In the statement of courses a period, unless otherwise specified, is a weekly exercise for one year. A unit of college work consists of the equivalent of one weekly exercise, either a recitation, a lecture, a laboratory period of two and a half or three hours, or an assignment of work on which an examination is held. A lecture having connected with it two laboratory hours counts as one unit and a half.

In the tables, pages 30 to 39, the units of credit are the same as the number of periods, unless otherwise stated.

Group I. Greek and Latin

Entrance requirements: English; Mathematics A, B; Greek A, B; Latin, A, B, C; and $2\frac{1}{2}$ elective units.

This group is largely based on the long established classical curriculum, not however requiring so large an amount of the ancient languages as formerly, thus giving an opportunity for study in other subjects.

This group is specially recommended for those intending to enter the ministerial or legal professions and also provides the necessary foundation for advanced language study.

This group leads to the degree of Bachelor of Arts.

Group II. Latin and Modern Languages

Entrance Requirements: English; Mathematics A, B; Latin A, B, C; German or French or Greek A; History 1 unit; and $2\frac{1}{2}$ elective units.

In this group the emphasis is laid on the modern languages and provides for those who wish to make a special study of them.

This group is well adapted to preparation for legal or literary pursuits and for teaching.

This group leads to the degree of Bachelor of Arts.

Group III. Latin and Chemistry or Physics

Entrance Requirements: English; Mathematics A, B; Latin A, B, C; German or French; History 1 unit; and $2\frac{1}{2}$ elective units.

In this group emphasis is laid on Chemistry and Physics with the requirement that the student shall give special attention to one of these subjects. The literary training is given by a continuance of Latin during the Freshman year with sufficient time devoted to the modern languages to enable the student to obtain a good command of these languages.

This and the following group are recommended to those who intend to enter on scientific professional studies including engineering or to engage in manufacturing or commercial pursuits, or who intend to teach in these subjects.

This group leads to the degree of Bachelor of Science.

Group IV. Modern Languages and Chemistry or Physics

Entrance Requirements: English; Mathematics A, B; two languages, German, French or Latin A, B; and $5\frac{1}{2}$ elective units

(4½ if Latin is offered) of which not more than 2 may be in Science.

This group is the same as Group III, except that modern languages entirely replace Latin.

This group leads to the degree of Bachelor of Science.

Group V. Biology, Chemistry and Physics—Pre-Medical Group

Entrance Requirements: English; Mathematics A, B; two languages, German, French or Latin A, B.; and 5½ elective units (4½ if Latin is offered) of which not more than 2 may be in Science.

In this group the student obtains a good foundation in each of the great divisions of scientific study and it is recommended specially to those who intend to enter on medical studies or to teach general science.

This group leads to the degree of Bachelor of Science.

Group VI. Commerce and Finance

Entrance Requirements: English; Mathematics A, B; two languages (other than English) one of which must be French or German; History 2 units; and sufficient electives to make a total of 15 units.

This group is arranged to meet the needs of those who do not wish to pursue general scientific or literary studies but desire to prepare themselves for commercial or financial pursuits.

This group leads to the degree of Bachelor of Science.

Group VII. Civil Engineering

Group VIII. Municipal Engineering

Group IX. Mechanical Engineering

Group X. Electrical Engineering

For Groups VII.-X., Entrance Requirements: English; Mathematics A, B, D and E; German; Latin A, or French; Science, not more than 2 units; and sufficient electives to make a total of 15 units. These groups lead to the degree of Bachelor of Science.

Group I Greek and Latin

FRESHMAN YEAR.

GREEK 1, 2. *Three periods.*

Xenophon: Hellenica, Lysias.

LATIN 1, 2, 3. *Three periods.*

Livy, Horace: Odes, Cicero: De Senectute.

ENGLISH 1, 2, 3. *Two periods.*

Rhetoric, History of American Literature.

MATHEMATICS 1, 2. *Three periods.*

Solid Geometry, Plane and Spherical Trigonometry.

HISTORY 1. *Two periods.*

Political History of Modern Europe.

ENGLISH BIBLE 1. *One period.*

General Introduction.

CHEMISTRY 1. *Three lectures and six laboratory hours.*

General Chemistry.

SOPHOMORE YEAR.

GREEK 3, 4. *Three periods.*Plato: Apology and Crito.
Homer: Odyssey.LATIN 4, 5, 6. *Three periods.*

Cicero: De Amicitia or De Natura Deorum, Horace: Satires, De Arte Poetica, Tacitus.

ENGLISH 4, 5, 6. *Two periods.*

History of English Literature.

MATHEMATICS 3, 4. *Three periods.*

Advanced Algebra, Plane Analytic Geometry.

GERMAN B. *Three periods.*

Grammar, Composition, Translation.

PHILOSOPHY 1, 2. *Two periods.*

Psychology, Introduction to Philosophy.

JUNIOR YEAR.

ENGLISH 10, 11. *Two periods.*

Shakespeare, Milton, Nineteenth Century Poets.

GERMAN 1 or 2. *Three periods.*

Syntax, Composition, Conversation, Modern Prose, Private reading, (or Classics).

Or

FRENCH A. *Three periods.*

Grammar, Composition, Translation.

EVIDENCES of CHRISTIANITY. *Two periods, first semester.*PHILOSOPHY 3, 5. *Two periods.*

Logic, Ethics.

PHYSICS A, or 1 and 2 as advised.

Three lectures and three laboratory hours. Four units.

General Physics.

ELECTIVES to complete fifteen units..

SENIOR YEAR.

POLITICAL SCIENCE 2. *Three periods.*

Economics, International Law.

PHILOSOPHY. 6-8. *Four periods.*

History of Philosophy, Theism.

ELECTIVES to complete fifteen units.

Group II. Latin and Modern Languages

FRESHMAN YEAR.

LATIN 1, 2, 3. *Three periods.*

Livy, Horace: Odes, Cicero: De Senectute.

*GERMAN 1. *Three periods.*

Syntax, Composition, Conversation, Modern Prose, Private Reading.

Or

FRENCH A. *Three periods.*

Grammar, Composition, Translation.

ENGLISH 1, 2, 3. *Two periods.*

Rhetoric, History of American Literature.

MATHEMATICS 1, 2. *Three periods.*

Solid Geometry, Plane and Spherical Trigonometry.

HISTORY 1. *Two periods.*

Political History of Modern Europe.

ENGLISH BIBLE 1. *One period.*

General Introduction.

BIOLOGY 1, 2, 3.

General Biology, Zoology.

CHEMISTRY 1.

General Chemistry.

PHYSICS A or 1 and 2.

General Physics.

Three lectures and laboratory work. Three to four units.

SOPHOMORE YEAR.

LATIN 4, 5, 6. *Three periods.*

Cicero: De Amicitia or De Natura Deorum, Horace: Satires, De Arte Poetica, Tacitus.

GERMAN 2. *Three periods.*

Classics, Private Reading. (Or German 1).

FRENCH 1. *Three periods.*

Grammar, Composition, Translation, Modern Prose, Private Reading.

(Or French A).

ENGLISH 4, 5, 6. *Two periods.*

History of English Literature.

MATHEMATICS 3, 4. *Three periods.*

Advanced Algebra, Plane Analytic Geometry.

PHILOSOPHY 1, 2. *Two periods.*

Psychology, Introduction to Philosophy.

JUNIOR YEAR.

GERMAN 4. *Three periods.*

Epochs of German Literature; Collateral Reading. (Or German 2).

FRENCH 2. *Three periods.*

Classics, Private Reading. (Or French 1).

ENGLISH 7-11. *Four periods.*

Nineteenth Century Prose, Nineteenth Century Novel, The Short Story, Shakespeare, Milton, Nineteenth Century Poets.

EVIDENCES of CHRISTIANITY. *Two periods, first semester.*

PHILOSOPHY 5. *Two periods, second semester.*

Ethics.

ELECTIVES to complete fifteen units.

SENIOR YEAR.

POLITICAL SCIENCE 2. *Three periods.*

Economics, International Law.

MODERN LANGUAGES. *Six periods.*

Advanced Courses.

ELECTIVES to complete fifteen units.

* Students offering Greek for admission will take German A, elementary course.

Group III. Latin and Chemistry or Physics

FRESHMAN YEAR.

LATIN 1, 2, 3. *Three periods.*
Livy, Horace: Odes, Cicero: De Senectute.
GERMAN 1. *Three periods.*
Syntax, Composition, Conversation, Modern Prose, Private Reading.
ENGLISH 1, 2, 3. *Two periods.*
Rhetoric, History of American Literature.

MATHEMATICS 1, 2. *Three periods.*
Solid Geometry, Plane and Spherical Trigonometry.
HISTORY 1. *Two periods.*
Political History of Modern Europe.
ENGLISH BIBLE 1. *One period.*
General Introduction.
CHEMISTRY 1. *Three lectures and six laboratory hours.*
General Chemistry.

SOPHOMORE YEAR.

ENGLISH 4, 5, 6. *Two periods.*
History of English Literature.
GERMAN 2. *Three periods.*
Classics, Private Reading.
Or
FRENCH A. *Three periods.*
Grammar, Composition, Translation.
MATHEMATICS 3, 4. *Three periods.*
Advanced Algebra, Plane Analytic Geometry.

PHILOSOPHY 1, 2. *Two periods.*
Psychology, Introduction to Philosophy.
CHEMISTRY 2. *Nine laboratory hours including necessary class exercises.*
Qualitative Analysis.
PHYSICS 1, 2. *Three lectures and three laboratory hours. Four units.*
General Physics.

JUNIOR YEAR.

Section in Chemistry.
ENGLISH 10, 11. *Two periods.*
Shakespeare, Milton, Nineteenth Century Poets.
GERMAN 3. *Three periods.*
Scientific Reading.
EVIDENCES OF CHRISTIANITY. *Two periods, first semester.*
PHILOSOPHY 5. *Two periods, second semester.*
Ethics.
CHEMISTRY 3. *Nine laboratory hours including necessary class exercises.*
Quantitative Analysis.
PHYSICS 3, 4. *Three lectures and three laboratory hours. Four units.*
General Physics.
ELECTIVES to complete *fifteen units.*

Section in Physics.
ENGLISH 10, 11. *Two periods.*
Shakespeare, Milton, Nineteenth Century Poets.
GERMAN 3. *Three periods.*
Scientific Reading.
EVIDENCES OF CHRISTIANITY. *Two periods, first semester.*
PHILOSOPHY 5. *Two periods, second semester.*
Ethics.
CHEMISTRY 3. *Nine laboratory hours including necessary class exercises.*
Quantitative Analysis.
Or
MATHEMATICS 5. *Three periods.*
Differential and Integral Calculus.
PHYSICS to aggregate *four or six units.*

SENIOR YEAR.

Section in Chemistry.
POLITICAL SCIENCE 2. *Three periods.*
Economics, International Law.
CHEMISTRY 4. *Three lectures and laboratory work. Four units.*
Organic Chemistry. Also at least *three units* in Analytical Chemistry.
ELECTIVES to complete *fifteen units.*

Section in Physics.
POLITICAL SCIENCE 2. *Three periods.*
Economics, International Law.
PHYSICS. *Six or more units.*
ELECTIVES to complete *fifteen units.*

Group IV. Modern Languages and Chemistry or Physics

FRESHMAN YEAR.

GERMAN 1. Three periods.

Syntax, Composition, Conversation. Modern Prose, Private Reading.

***FRENCH 1. Three periods.**

Grammar, Composition, Dictation, Modern Prose, Private Reading.

ENGLISH 1, 2, 3. Two periods.

Rhetoric, History of American Literature.

MATHEMATICS 1, 2. Three periods.

Solid Geometry. Plane and Spherical Trigonometry.

HISTORY 1. Two periods.

Political History of Modern Europe.

ENGLISH BIBLE 1. One period.

General Introduction.

CHEMISTRY 1. Three lectures and six laboratory hours.

General Chemistry.

SOPHOMORE YEAR.

GERMAN 2. Three periods.

Classics, Private Reading. (Or German 1).

Or

FRENCH 2. Three periods.

Classics, Private Reading. (Or French 1).

ENGLISH 4, 5, 6. Two periods.

History of English Literature.

MATHEMATICS 3, 4. Three periods.

Advanced Algebra, Plane Analytic Geometry.

PHILOSOPHY 1, 2. Two periods.

Psychology, Introduction to Philosophy.

CHEMISTRY 2. Nine laboratory hours including the necessary class work.

Qualitative Analysis.

PHYSICS 1, 2. Three lectures and laboratory work. Four or five units.

General Physics.

JUNIOR YEAR.

Section in Chemistry.

GERMAN. Three periods.

Scientific Reading.

ENGLISH 10, 11. Two periods.

Shakespeare, Milton, Nineteenth Century Poets.

EVIDENCES of CHRISTIANITY. Two periods, first semester.

PHILOSOPHY 5. Two periods, second semester.

Ethics.

CHEMISTRY 3. Nine laboratory hours including the necessary class work.

Quantitative Analysis.

PHYSICS 3, 4. Three lectures and three laboratory hours. Four units.

General Physics.

ELECTIVES to complete fifteen units.

Section in Physics.

GERMAN 3. Three periods.

Scientific Reading.

ENGLISH 10, 11. Two periods.

Shakespeare, Milton, Nineteenth Century Poets.

EVIDENCES of CHRISTIANITY. Two periods, first semester.

PHILOSOPHY 5. Two periods, second semester.

Ethics.

CHEMISTRY 3. Nine laboratory hours including the necessary class work.

Quantitative Analysis.

Or

MATHEMATICS 5. Three periods.

Differential and Integral Calculus.

PHYSICS. To aggregate four or six units.

SENIOR YEAR.

Section in Chemistry.

GERMAN. Three periods.

Advanced courses.

POLITICAL SCIENCE 2. Three periods.

Economics, International Law.

CHEMISTRY 4. Three lectures and laboratory work. Four units.

Organic Chemistry. Also at least three units in Analytical Chemistry.

ELECTIVES to complete fifteen units.

Section in Physics.

GERMAN. Three periods.

Advanced courses.

POLITICAL SCIENCE 2. Three periods.

Economics, International Law.

PHYSICS. Six or more units.

ELECTIVES to complete fifteen units.

* Students offering Latin for admission will take the French elementary course.

Group V. Biology, Chemistry and Physics

FRESHMAN YEAR.

GERMAN 1. *Three periods.*
Syntax, Composition, Conversation, Modern Prose, Private Reading.

*FRENCH 1. *Three periods.*
Grammar, Composition, Dictation, Modern Prose, Private Reading.

Or

LATIN 1, 2, 3. *Three periods.*
Livy, Horace: Odes, Cicero: De Senectute.

ENGLISH 1, 2, 3. *Two periods.*
Rhetoric, History of American Literature.

MATHEMATICS 1, 2. *Three periods.*
Solid Geometry, Plane and Spherical Trigonometry.

HISTORY 1. *Two periods.*
Political History of Modern Europe.

ENGLISH BIBLE 1. *One period.*
General Introduction.

CHEMISTRY 1. *Three lectures and six laboratory hours.*
General Chemistry.

SOPHOMORE YEAR.

GERMAN 2. *Three periods.*
Classics, Private Reading.

Or

FRENCH 2. *Three periods.*
Classics, Private Reading.

ENGLISH 4, 5, 6. *Two periods.*
History of English Literature.

MATHEMATICS 3, 4. *Three periods.*
Advanced Algebra, Plane Analytic Geometry.

PHILOSOPHY 1, 2. *Two periods.*
Psychology, Introduction to Philosophy.

CHEMISTRY 2. *Nine laboratory hours including class work.*
Qualitative Analysis.

PHYSICS 1, 2. *Three lectures and laboratory work. Four units.*
General Physics.

JUNIOR YEAR.

GERMAN 3. *Three periods.*
Scientific Reading.

ENGLISH 10, 11. *Two periods.*
Shakespeare, Milton, Nineteenth Century Poets.

EVIDENCES OF CHRISTIANITY. *Two periods, first semester.*

PHILOSOPHY 5. *Two periods, second semester.*
Ethics.

BIOLOGY 1, 2, 3. *Three lectures and six laboratory hours.*
General Biology, Zoology.

CHEMISTRY 3. *Nine laboratory hours including class work.*
Quantitative Analysis.

PHYSICS 3, 4. *Three lectures and three laboratory hours. Four units.*
General Physics.

SENIOR YEAR.

POLITICAL SCIENCE 2. *Three periods.*
Economics, International Law.

BIOLOGY 4, 5, 6, 7. *Three periods.*
Human Anatomy and Physiology, Sanitation and Bacteriology, Histology and Embryology.

CHEMISTRY 4. *Three lectures and laboratory work. Four units.*
Organic Chemistry.

ELECTIVES to complete fifteen units.

* Students offering Latin for admission will take the French elementary course.

Group VI. Commerce and Finance

FRESHMAN YEAR.

GERMAN 1. *Three periods.*
Syntax, Composition, Conversation, Modern Prose, Private Reading.
FRENCH 1. *Three periods.*
Grammar, Composition, Dictation, Modern Prose, Private Reading.
ENGLISH 1, 2, 3. *Two periods.*
Rhetoric, History of American Literature.
MATHEMATICS 1, 2. *Three periods.*
Solid Geometry, Plane and Spherical Trigonometry.

HISTORY 1. *Two periods.*
Political History of Modern Europe.
ENGLISH BIBLE 1. *One period.*
General Introduction.
BIOLOGY 1, 2, 3.
General Biology, Zoology.
One { CHEMISTRY 1.
General Chemistry.
PHYSICS A, OF 1 and 2 as advised. *Three to four units.*

SOPHOMORE YEAR.

GERMAN 2. *Three periods.*
Classics, Private Reading.
Or
FRENCH 2. *Three periods.*
Classics, Private Reading.
ENGLISH 4, 5, 6. *Two periods.*
History of English Literature.
MATHEMATICS 3, 4. *Three periods.*
Advanced Algebra, Plane Analytic Geometry.

PHILOSOPHY 1, 2. *Two periods.*
Psychology, Introduction to Philosophy.
FINANCE. *Two periods.*
Theory of Accounts, Theory of Investments.
ELECTIVES to complete *fifteen units.*

JUNIOR YEAR.

GERMAN. *Three periods.*
Advanced Courses.
Or
FRENCH. *Three periods.*
Advanced Courses.
ENGLISH 7-11. *Four periods.*
Nineteenth Century Prose, Nineteenth Century Novel, The Short Story, Shakespeare, Milton, Nineteenth Century Poets.
HISTORY. *Three periods.*
Courses 2-5.

EVIDENCES OF CHRISTIANITY. *Two periods, first semester.*
PHILOSOPHY 5. *Two periods, second semester.*
Ethics.
POLITICAL SCIENCE 1. *Two periods.*
American Politics, American Government.
COMMERCE. *Two periods.*
Commercial Law, History of Commerce.
ELECTIVES to complete *fifteen units*

SENIOR YEAR.

POLITICAL SCIENCE 2. *Three periods.*
Economics, International Law.
PHILOSOPHY. *Four periods.*
Chosen from Courses 3-8.

HISTORY. *Three periods.*
From Courses 2-6.
BUSINESS. *Two periods.*
Statistics, Business Practice.
ASTRONOMY. *Two periods.*
GEOLOGY. *Two periods.*

Group VII. Civil Engineering

FRESHMAN YEAR.

- GERMAN 1. *Three periods.*
Syntax, Composition, Conversation, Modern Prose, Private Reading.
- ENGLISH 1, 2, 3. *Two periods.*
Rhetoric, History of American Literature.
- MATHEMATICS 2, 3, 4. *Four periods.*
Spherical Trigonometry, Advanced Algebra, Plane and Solid Analytical Geometry.
- HISTORY 1. *Two periods.*
Political History of Modern Europe.
- ENGLISH BIBLE 1. *One period.*
General Introduction.
- CHEMISTRY 1. *Three lectures and six laboratory hours.*
General Chemistry.
- PHYSICS 1, 2. *Three lectures and three laboratory hours.*
General Physics.
- C. E. 1. *One period.*
Mechanical Drawing.

SOPHOMORE YEAR.

- GERMAN 3. *Two periods.*
Scientific Reading.
- ENGLISH 4, 5, 6. *Two periods.*
History of English Literature.
- MATHEMATICS 5. *Four periods.*
Differential and Integral Calculus.
- CHEMISTRY 2. *Nine laboratory hours, including the necessary class work.*
Qualitative Analysis.
- PHYSICS 3, 4. *Three lectures and three laboratory hours.*
General Physics.
- C. E. 2. *Two periods.*
Engineering Drawing.

Summer Work.

- C. E. 3. *Three weeks immediately preceding the beginning of Junior Year.*
Field Work in Surveying in connection with Course 4.

JUNIOR YEAR.

- ENGLISH 10, 11. *Two periods.*
Shakespeare, Milton, Nineteenth Century Poets.
- EVIDENCES OF CHRISTIANITY. *Two periods, first semester.*
- PHILOSOPHY 5. *Two periods, second semester.*
Ethics.
- PHYSICS 5. *Two lectures and three laboratory hours, first semester.*
Dynamics.
- MATHEMATICS 9. *Two periods, first semester.*
General Astronomy (abridged).
- GEOLOGY and MINERALOGY 3. *Two periods, first semester.*
Crystallography, Determinative Mineralogy.
- C. E. 4. *Two periods, first semester.*
Elementary Surveying, Office Work.
- C. E. 5. *Three periods.*
Mechanics, Statics.
- C. E. 6. *Four periods, second semester.*
Railroads (A).
- C. E. 7. *One period, second semester.*
Cement Testing and Highways.
- C. E. 10. *Three periods, second semester.*
Hydraulics.
- C. E. 18. *One period.*
Seminary

Summer Work.

- C. E. 8. *Three weeks immediately preceding the beginning of Senior Year.*
Field Work in Surveying in connection with Courses 9 and 16.

SENIOR YEAR.

- POLITICAL SCIENCE 2. *Three periods.*
Economics, International Law.
- GEOLOGY 1. *Two periods, first semester.*
Structural and Dynamical Geology.
- C. E. 9. *Two periods, first semester.*
Advanced Surveying, Office Work.
- C. E. 11. *Three periods.*
Structural Design.
- C. E. 12. *Two periods, second semester.*
Structural Drafting.
- C. E. 13. *Two periods, first semester.*
Masonry.
- C. E. 16. *Two periods, second semester.*
Railroads, (B).
- C. E. 17. *One period, second semester.*
Contracts and Specifications.
- C. E. 18. *One period.*
Seminary.
- THESIS. *One unit.*
- ELECTIVE. *Four units.*

Group VIII. Municipal Engineering

FRESHMAN YEAR.

- GERMAN 1. *Three periods.*
Syntax, Composition, Conversation, Modern Prose, Private Reading.
- ENGLISH 1, 2, 3. *Two periods.*
Rhetoric, History of American Literature.
- MATHEMATICS 2, 3, 4. *Four periods.*
Spherical Trigonometry, Advanced Algebra, Plane and Solid Analytical Geometry.
- HISTORY 1. *Two periods.*
Political History of Modern Europe.
- ENGLISH BIBLE 1. *One period.*
General Introduction.
- CHEMISTRY 1. *Three lectures and six laboratory hours.*
General Chemistry.
- PHYSICS 1, 2. *Three lectures and three laboratory hours.*
General Physics.
- C. E. 1. *One period.*
Mechanical Drawing.

SOPHOMORE YEAR.

- GERMAN 3. *Two periods.*
Scientific Reading.
- ENGLISH 4, 5, 6. *Two periods.*
History of English Literature.
- MATHEMATICS 5. *Four periods.*
Differential and Integral Calculus.
- CHEMISTRY 2. *Nine laboratory hours, including the necessary class work.*
Qualitative Analysis.
- PHYSICS 3, 4. *Three lectures and three laboratory hours.*
General Physics.
- C. E. 2. *Two periods.*
Engineering Drawing.

Summer Work.

- C. E. 3. *Three weeks immediately preceding the beginning of Junior Year.*
Field Work in Surveying in connection with Course 4.

JUNIOR YEAR.

- ENGLISH 10, 11. *Two periods.*
Shakespeare, Milton, Nineteenth Century Poets
- EVIDENCES OF CHRISTIANITY. *Two periods, first semester.*
- PHILOSOPHY 5. *Two periods, second semester.*
Ethics.
- PHYSICS 5. *Two lectures and three laboratory hours, first semester.*
Dynamics.
- MATHEMATICS 9. *Two periods, first semester.*
General Astronomy (abridged).
- GEOLOGY and MINERALOGY 3. *Two periods, first semester.*
Crystallography, Determinative Mineralogy.
- C. E. 4. *Two periods, first semester.*
Elementary Surveying, Office Work.
- C. E. 5. *Three periods.*
Mechanics, Statics.
- C. E. 6. *Four periods, second semester.*
Railroads (A).
- C. E. 7. *One period, second semester.*
Cement Testing and Highways.
- C. E. 10. *Three periods, second semester.*
Hydraulics.
- C. E. 18. *One period.*
Seminary.

Summer Work.

- C. E. 8. *Three weeks immediately preceding the beginning of Senior Year.*
Field Work in Surveying in connection with Courses 9 and 16.

SENIOR YEAR.

- POLITICAL SCIENCE 2. *Three periods.*
Economics, International Law.
- GEOLOGY 1. *Two periods, first semester.*
Structural and Dynamical Geology.
- CHEMISTRY 5. *Two periods, first semester.*
Water Analysis.
- BIOLOGY 7. *Two Periods, second semester.*
Sanitation and Bacteriology.
- C. E. 9. *Two periods, first semester.*
Advanced Surveying, Office Work.
- C. E. 11. *Three periods.*
Structural Design.
- C. E. 13. *Two periods, first semester.*
Masonry.
- C. E. 14. *Two periods, second semester.*
Sewerage.
- C. E. 15. *Two periods, first semester.*
Water Supply Engineering.
- C. E. 17. *One period, second semester.*
Contracts and Specifications.
- C. E. 18. *One period.*
Seminary.
- THESIS. *One unit.*
- ELECTIVE. *Two units.*

Group IX. Mechanical Engineering

FRESHMAN YEAR.

- GERMAN 1. *Three periods.*
 Syntax, Composition, Conversation,
 Modern Prose, Private Reading.
- ENGLISH 1, 2, 3. *Two periods.*
 Rhetoric, History of American Literature.
- MATHEMATICS 2, 3, 4. *Four periods.*
 Spherical Trigonometry, Advanced Algebra, Plane and Solid Analytical Geometry.
- HISTORY 1. *Two periods.*
 Political History of Modern Europe.
- ENGLISH BIBLE 1. *One period.*
 General Introduction.
- CHEMISTRY 1. *Three lectures and six laboratory hours.*
 General Chemistry.
- PHYSICS 1, 2. *Three lectures and three laboratory hours.*
 General Physics.
- C. E. 1. *One period.*
 Mechanical Drawing.

SOPHOMORE YEAR.

- GERMAN 3. *Two periods.*
 Scientific Reading.
- ENGLISH 4, 5, 6. *Two periods.*
 History of English Literature.
- MATHEMATICS 5. *Four periods.*
 Differential and Integral Calculus.
- CHEMISTRY 2. *Six laboratory hours including the necessary class work.*
 Qualitative Analysis.
- PHYSICS 3, 4. *Three lectures and three laboratory hours.*
 General Physics.
- C. E. 2. *Two periods.*
 Engineering Drawing.
- C. E. 5. *Three periods.*
 Mechanics, Statics.
- M. E. 1. *One period.*
 Shopwork.

JUNIOR YEAR.

- ENGLISH 10, 11. *Two periods.*
 Shakespeare, Milton, Nineteenth Century Poets.
- EVIDENCES OF CHRISTIANITY. *Two periods, first semester.*
- PHILOSOPHY 5. *Two periods, second semester.*
 Ethics.
- PHYSICS 5. *Two lectures and three laboratory hours, first semester.*
 Dynamics.
- C. E. 10. *Three periods, second semester.*
 Hydraulics.
- M. E. 2. *One period.*
 Shopwork.
- M. E. 3. *Four periods, first semester.*
 Machine Design.
- M. E. 4. *Three periods, second semester.*
 Mechanism.
- M. E. 5. *Three periods.*
 Steam and Gas Engines.
- E. E. 1, 2. *Three lectures and three laboratory hours, second semester.*
- M. E. 9. *One period.*
 Seminary.

SENIOR YEAR.

- POLITICAL SCIENCE 2. *Three periods.*
 Economics, International Law.
- C. E. 11. *Three periods.*
 Structural Design.
- M. E. 6. *Two periods, first semester.*
 Strength of Materials Laboratory.
- M. E. 7. *Five periods.*
 Power Plant Engineering and Management.
- M. E. 8. *Two periods.*
 Machine Design.
- M. E. 9. *One period.*
 Seminary.
- THESIS. *One unit.*
- ELECTIVE. *Two units.*

Group X. Electrical Engineering.

FRESHMAN YEAR.

GERMAN 1. *Three periods.*
Syntax, Composition, Conversation, Modern Prose, Private Reading.
ENGLISH 1, 2, 3. *Two periods.*
Rhetoric, History of American Literature.
MATHEMATICS 2, 3, 4. *Four periods.*
Spherical Trigonometry, Advanced Algebra, Plane and Solid Analytical Geometry.

HISTORY 1. *Three periods.*
Political History of Modern Europe.
ENGLISH LITERATURE 1. *One period.*
General Introduction.
CHEMISTRY 1. *Three lectures and six laboratory hours.*
General Chemistry.
PHYSICS 1, 2. *Three lectures and three laboratory hours.*
General Physics.
C. E. 1. *One period.*
Mechanical Drawing.

SOPHOMORE YEAR.

GERMAN 3. *Two periods.*
Scientific Reading.
ENGLISH 4, 5, 6. *Two periods.*
History of English Literature.
MATHEMATICS 5. *Four periods.*
Differential and Integral Calculus.
CHEMISTRY 2. *Six laboratory hours including the necessary class work.*
Qualitative Analysis.

PHYSICS 3, 4. *Three lectures and three laboratory hours.*
General Physics.
C. E. 2. *Two periods.*
Engineering Drawing.
C. E. 5. *Three periods.*
Mechanics, Statics.
M. E. 1. *One period.*
Shopwork.

JUNIOR YEAR.

ENGLISH 10, 11. *Two periods.*
Shakespeare, Milton, Nineteenth Century Poets.
EVIDENCES OF CHRISTIANITY. *Two periods, first semester.*
PHILOSOPHY 5. *Two periods, second semester.*
Ethics.
MATHEMATICS 6. *Two periods.*
Differential Equations.
C. E. 10. *Three periods, second semester.*
Hydraulics.
PHYSICS 5. *Two lectures and three laboratory hours, first semester.*
Dynamics.

PHYSICS 6. *Two lectures and six laboratory hours, first semester. Three laboratory hours, second semester.*
Electrical Measurements.
E. E. 1, 2. *Three lectures and nine laboratory hours, second semester.*
Dynamometers and Motors.
M. E. 2. *One period.*
Shopwork.
M. E. 3. *Two periods, first semester.*
Machine Design.
E. E. 8. *One period.*
Seminary.

SENIOR YEAR.

POLITICAL SCIENCE 2. *Three periods.*
Economics, International Law.
M. E. 5. *Three periods, first semester.*
Steam and Gas Engines (abridged).
M. E. 6. *Two periods, first semester.*
Strength of Materials Laboratory.
E. E. 3. *One period.*
Dynamo and Motor Design.
E. E. 4. *Four periods, second semester.*
Theory of Alternating Currents.

E. E. 5. *Two periods, first semester.*
Electric Lighting and Central Stations.
E. E. 6. *Two periods, second semester.*
Electric Railways.
E. E. 7. *Four periods.*
Electrical Engineering Laboratory.
E. E. 8. *One period.*
Seminary.
THESIS. *One unit.*
ELECTIVE. *Two units.*

COURSES OF INSTRUCTION

English 1913-14

Professor HIMES and Mr. MOSER.

1. Rhetoric. A study of the subject with the aid of a text-book. The aim of the course is (1) to acquaint the student with the principles of good writing, and (2) to lead to an appreciation of good literature. A course in composition is conducted in connection with this subject.

Freshman course. Two periods, first semester.

2. History of American Literature. A study of the subject with the aid of a text-book. Quizzes, collateral reading, papers.

Freshman course. Two periods, second semester.

3. Composition. Weekly themes on assigned subjects corrected and commented on by the instructor, in personal consultation with the student.

Freshman course throughout the year.

4. History of English Literature. A text-book forms the basis of study. Quizzes, collateral reading, papers.

Sophomore course. Two periods throughout the year.

5. Composition. Advanced work in description and narration. Themes corrected and commented on in personal consultation with the student.

Sophomore course throughout the year.

6. Elocution. A course of lectures on the subject. Vocal exercises, declamations, reading. Practice in the preparation and delivery of speeches.

Sophomore course throughout the year.

7. Nineteenth Century Prose. A study of the development of modern prose. Selected readings from Coleridge, Lamb, De Quincey, Macaulay, Carlyle, Ruskin, Arnold and others.

Junior course. Two periods, first third of year.

8. Nineteenth Century Novel. A study of the development and structure of the novel. Lectures, collateral reading, papers. Junior course. Two periods, second third of year.

9. The Short Story. A study of its principles and structure. Selections from Hawthorne, Poe, Stevenson, Kipling, Harte, Twain, O. Henry, Ruth Stuart, Aldrich, Wister and others. Junior course. Two periods, last third of year.

1-9 Mr. MOSER.

10. Course in English Poetry.

A Shakespeare—Dramatic Art. Six plays are analyzed and interpreted, the most suggestive and important passages being read in the class. The writing of dialogue is practiced.

B Milton—Epic Art. Five books of the *Paradise Lost* are read; the views of commentators are examined; Milton's conception of the material and spiritual universe is elucidated; portions of the poem are memorized.

C Nineteenth Century Poets. Selected poems of Wordsworth, Coleridge, Byron, Shelley, Keats, Tennyson, Browning, Matthew Arnold, D. G. Rossetti and Swinburne are analyzed for thought and structure.

Junior course. Two periods throughout the year.

11. Writing and Speaking. Required of all students. The rendering of declamations and orations and the preparation of essays and debates are continued throughout the Junior and Senior years. Subjects assigned are suggested either by miscellaneous matters of interest or by topics found in the text-books studied. To secure care and accuracy on the part of the student the written work is read and criticised privately by the instructor.

10 and 11 Professor HIMES.

English 1914—15

Professor SHIPHERD and Mr MOSER.

English A. English Composition: consisting of practice in writing exposition, argument, description, and narration, in long

and short themes, and in letters; with the parallel study of specimens, and of the principles of rhetoric as they apply to writing. Lectures, recitations, written exercises in the classroom and outside, and personal conferences.

Required course for all Freshmen. Two periods throughout the year.

English 1. English and American Literature: survey of English Literature from Chaucer to Kipling, and of the chief American writers; lectures, collateral reading, short written exercises in class, and written reports.

Required course for all Sophomores. Two periods throughout the year.

English 2. Shakespeare: the first semester, three plays (possibly four) read in class; the second semester, lectures on the poems and the rest of the plays, with collateral reading.

Required course for all Juniors. Two periods throughout the year.

English 3. Nineteenth Century Prose: (a) first third of the year, a study of the development of the modern critical essay—selected readings from Coleridge, Lamb, DeQuincey, Macaulay, Carlyle, Ruskin, Matthew Arnold, and others; (b) second third of the year, fiction—a study of the development and structure of the novel, with collateral reading and reports; (c) last third of the year, fiction—a study of the principles and structure of the short story, with selections from Hawthorne, Poe, Stevenson, Kipling, Bret Harte, Mark Twain, Aldrich, Ruth McEnery Stuart, Owen Wister, O. Henry, and others.

Required course for Juniors in Groups II and VI; open to all other Juniors as an elective course. Two periods throughout the year.

English 4. Public Speaking and Oral Reading: practice in prepared and extempore speaking, in oral reading of prose and poetry, and in general platform work.

Elective course open to all qualified Sophomores, Juniors, and Seniors. Two periods throughout the year.

In the curriculum as detailed on pages 30-39 the following changes will be made in 1914-15:

English A instead of English 1, 2, 3.

English 1 instead of English 4, 5, 6.

English 2 instead of English 10, 11.

English 2, 3 instead of English 7-11.

German

Professor GRIMM and Mr. WEIDENBACH.

A An elementary course. For students with no preliminary training in German, but with several years' work in other languages. It includes the study of grammar, practice in writing and speaking German, translation of prose and poetry, and the memorizing of simple poems.

Three periods throughout the year.

B A course for beginners similar to German A, but especially designed for students in the Greek-Latin Group. For such students it completes the requirements in German for the degree of Bachelor of Arts. Those, however, who have the ministry in view, are advised to take also German 1 or German 2.

Three periods throughout the year.

1. For students who have presented German for admission; also for those who have completed German A. It may likewise be taken by students who have passed in German B. This course comprises a brief review of grammar, a careful study of syntax combined with oral and written prose composition, exercises in conversation, and readings, both with previous preparation and at sight, from standard writers of modern German prose. Some time is also given to the reciting of ballads and lyrics. Outside reading may be assigned.

Three periods throughout the year.

2. For students who have passed in German, also open to those students who have attained a grade of not less than C in

German B. This course is devoted to the study of selections from classical authors, chiefly from Lessing, Goethe, and Schiller, with some attention to the laws and forms of poetics. It is partly conducted in German. Private reading is required.

Three periods throughout the year.

3. For candidates for the degree of Bachelor of Science, also open to others who have completed German 1. This course consists in the cursory reading in class of German essays of a general scientific character, together with private assignments on some special subject in Science or other college studies.

Two or three periods throughout the year.

4. For those students who have chosen German as their principal subject in the Modern Language-Latin Group, open also to others who satisfy the instructor of their fitness to take it. The work in this course, conducted as far as practicable in German, consists in lectures on the main epochs of the German language and literature, with collateral reading from representative poets and masters of German style.

A From the dawn of the modern period to the present time, with some attention to German literature in America.

Two or three periods, first semester.

B From the beginning of German literature to the dawn of the modern period.

Two or three periods, second semester.

5. An elective course on German literature in the period of the Reformation, with special reference to Luther and the church hymns. Open to advanced students in German.

Hours arranged to suit the convenience of instructor and students.

6. An elective course devoted to the discussion of grammatical topics, advanced composition, and the critical reading of selected texts. Special attention is given to the needs of those students who wish to teach German in the public or secondary schools.

Hours arranged to suit the convenience of instructor and students.

7. A course aiming to give practice in German correspondence, and to widen the student's vocabulary of modern German by means of extracts from newspapers, periodicals, and other suitable reading. It also presents to the student a general view of German land and people, and acquaints him with the history of the Germans in our own country. Attention is given to the needs of those looking forward to a business career. As far as practicable, the course will be conducted in German.

Hours to be arranged.

Deutscher Verein. Opportunity for more extended German conversation and discussions referring to German life, literature, and culture is offered to advanced students in a voluntary German Club, meeting fortnightly from November to April inclusive.

Greek

Professor BILLHEIMER.

Preparatory Greek.

A First Year Greek. An elementary course for students who have not presented Greek for admission. The course will cover White's First Greek Book and Book I of Xenophon's *Anabasis*.

Four periods throughout the year.

B Second Year Greek. A course for those who have taken Beginners' Greek. Books II-IV of Xenophon's *Anabasis* and selections from Xenophon's *Cyropaedia* will be read. Exercises in Greek prose composition will be given in connection with the reading of the text.

Three periods throughout the year.

1. Xenophon. Selections from Books I-IV of the *Hellenica*, with a thorough review of forms and the essentials of grammar.

Freshman course. Three periods, first semester.

2. Lysias. Selected Orations, special attention being given to syntax.

Freshman course. Three periods, second semester.

3. Plato. Apology and Crito. Interpretation of the text and advanced work in syntax.

Sophomore course. Three periods, first semester.

4. Homer. Books IX -XIII of the Odyssey. Attention will be given to the metre, to Ionic forms, and to the special features of syntax.

Sophomore course. Three periods, second semester.

5. Euripides. This course will give a practical introduction to Greek metrics, and will include the history of Greek Tragedy and of the Greek Theatre.

Junior course. Two periods, first semester.

6. Aristophanes with the history of Greek Comedy. Open only to students who have taken course 5.

Junior course. Two periods, second semester.

7. Euripides in English Translation. In addition to the reading of the plays this course will involve a study of their subjects, plots and divisions, and a scenic analysis of a number of plays by each member of the class. Open to all students.

Junior course. Two periods, second semester.

8. Demosthenes. De Corona. The course includes a complete review of the public life of Demosthenes and of the relations between Athens and Philip of Macedon.

Senior course. Two periods, first semester. [To be given 1914-15.]

9. Aristotle. The Athenian Constitution. In addition to the interpretation of the text topics in Athenian constitutional history and political institutions will be assigned for report.

Senior course. Two periods, second semester. [To be given 1914-15.]

To provide for applicants for Group I, who cannot offer the entrance requirements in Greek, but can offer three entrance

units in Modern Languages, provision is made to begin Greek in College. Such students have Preparatory Greek Courses A and B during Freshman and Sophomore years, and receive College credit. During Junior and Senior years they have Greek 1, 2, 3, 4.

A student who is a regular member of Group II will be allowed to elect courses in Greek, including Courses A and B, after the Sophomore year and will be given College credit for same.

Latin

Professor BIKLE.

Allen and Greenough's Latin Grammar and Harper's Latin Lexicon are recommended. Of the smaller dictionaries the student is advised to get the Elementary Latin Dictionary by Charlton T. Lewis.

1. Livy. Selections from Book I, and the Hannibalian War in Books XXI and XXII. Special attention is given to syntax and Livy's peculiarities of style. Collateral reading on the Punic Wars, and lectures on Rome and Carthage.

Freshman course. Three periods during the first semester up to the Christmas vacation.

2. Horace. Selections from the Odes, including a critical interpretation with special attention to the Horatian meters and the mythological and historical allusions of the text. Berens' Hand-Book of Mythology is recommended. Collateral reading on Horace as a lyric poet.

Freshman course. Three periods from the beginning of January to the last of March.

3. Cicero. The De Senectute will be read with thorough drill in syntax, special attention being given to the mode uses of the Latin Subjunctive.

Freshman course. Three periods from the last of March to the close of the academic year.

Note. During part of the Freshman year there will be, in

connection with the reading of the Latin text, drill in Latin Prose Composition embracing a rapid review of Latin syntax, with oral and written practice in the principles involved.

4. Cicero. The *De Amicitia* or the *De Natura Deorum*. Rigid drill in syntax will be continued with training in reading the Latin text with expression. Collateral reading of the life and times of Cicero. Informal lectures on Cicero's philosophical views.

Sophomore course. Three periods a week during the first semester up to the Christmas vacation.

5. Horace. *Satires* and the *De Arte Poetica*. After the study of some selected satires the *Ars Poetica* is read, and each student is required to prepare a written analysis of the poem. A review of the dactylic hexameter versification.

Sophomore course. Three periods from the beginning of January to the last of March.

6. Tacitus. The *Agricola* or selections from the *Annals*. Along with the translation of the text there will be a study of the times in relation to the literature of this period, and special attention will be given to the characteristics of the Silver Age Latinity.

Sophomore course. Three periods from the last of March to the close of the year.

7. Quintilian. Tenth Book of the *Institutes*. The student is required to give a close study of the terms used by Quintilian in literary criticism, and to make a summary and classification of the Greek and Roman authors.

Junior course. Two periods during the first semester to the Christmas vacation.

8. Juvenal. Selected *Satires*. With full explanations of the text and collateral reading on the private and social life of the Romans of the Empire. Followed by a short course in Roman Antiquities.

Junior course. Two periods from the beginning of January to the close of the college year.

9. Terence or Plautus. The *Andria* of Terence or the *Captivi* of Plautus. The *Dramatis Personae* are assigned to special members of the class and the parts are rendered both in Latin and English. Informal lectures on the Roman theatre; also on the origin and development of the Latin drama and the value of the Roman comedy to the philologist and the student of Roman life.

Senior course. Two periods for twelve weeks.

10. Latin Literature. A course of lectures embracing a general survey of the whole field, and aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, with special attention to the writers of the Golden and Silver Ages. Or,

Roman History. A course of lectures covering the period from 150 B. C. to 100 A. D.

Senior course. Two periods for ten weeks.

11. Roman Law. Morey's *Outlines* as the chief text book. After a careful study of the historical development and content of Roman Law, a paper is required from each member of the class on a subject assigned for special investigation. Or,

Roman Constitutional History. The subject is pursued with the aid of a text-book.

Senior course. Two periods for fourteen weeks.

ROMANCE LANGUAGES

French

Professor SCHAPPELLE.

A An elementary course for students who have not offered French for admission. For students in the Classical department, or in Science departments requiring Latin, it satisfies the requirements in French for the baccalaureate degree.* This course includes careful drill in pronunciation, the study of the

*Students who have the ministry in view may substitute German 7 or 11.

essentials of grammar with constant exercises in turning English into French, and the translation of easy French texts.

Three periods throughout the year.

1. An intermediate course for students who have offered French for admission, also open to those who have passed in French A. This course comprises the study of grammatical principles, composition, exercises in pronunciation, dictation, and readings from standard writers of modern prose. Outside reading may be assigned.

Three periods throughout the year.

2. Advanced course. Open to all students who have completed with credit French 1, or who have done equivalent work. This course is devoted to the study of French classics, with special reference to Corneille, Racine, Moliere. Some time is also given, during the second semester, to more difficult representative prose. Private reading is required.

Two or three periods throughout the year.

3. Scientific French. This course consists of the reading of texts and magazine articles dealing with scientific subjects. Subjects for outside reading, dealing with branches of science in which the students expect to specialize, will be assigned.

Two periods throughout the year.

Italian

Professor SCHAPPELLE.

1. Elementary course. Open to students who have completed the requirements in French. This course aims to give the student a thorough training in the rudiments of the Italian language and to enable him to read ordinary Italian with ease and accuracy.

Three periods throughout the year.

2. Advanced course. This course consists of a review of

grammar together with readings from more difficult modern prose and poetic works.

Two periods throughout the year.

Spanish

Professor SCHAPPELLE.

1. Elementary course. Open to students who have completed the requirements in French. This course is intended for those who desire a knowledge of the essentials of the Spanish language, either for literary work or for a business career.

Three periods throughout the year.

2. Advanced Course. This course consists of a review of grammar together with advanced composition. Selections from more difficult modern prose and poetic works, as well as from the classics, including Cervantes, will be read.

Comparative Philology

Professor GRIMM.

1. A course open to advanced students, dealing with the principles of Linguistic Science.

One period throughout the year.

2. Beginners' course in Sanskrit. Open to advanced students. This course includes the study of grammar and the interpretation of an easy text from Lanman's Reader.

Two periods throughout the year.

Biblical Department

Professor WENTZ.

1. General Introduction to the English Bible. This course aims to bring to the student a sympathetic knowledge of the life and thought of that nation which has most vitally influenced our own civilization. To do this reference must be made to Biblical history and geography. But the chief object is to acquaint the

student with the Bible as the record of the advance and culmination of the highest religious consciousness of the human race. The distinctive forms of thought contained in the Bible from the beginnings of Hebrew history down to the close of the Apostolic Age are studied in succession. The original message of the writers is sought out and translated into the logic of the Occidental mind. This course is of necessity only introductory, but it is intended to show that a knowledge of Biblical thought and literature is an essential and integral part of a liberal education.

Freshman course. One period throughout the year.

2. Literary Study of the Bible. The Bible is studied as a body of English literature and the sacred writings are subjected to a morphological analysis. The study of the literary forms is entirely independent of the historical investigation. The distinctive types of literary structure in the Bible as presented by Moulton in his *Modern Reader's Bible* are studied in detail and their permanent literary value is noted. The underlying principle of this study is that a thorough understanding of the outer literary form is an essential guide to an appreciation of the inner matter and spirit.

Sophomore course. One period throughout the year.

3. Life of Christ. A Survey is given of the political, religious, and social conditions in the time of Christ as the background necessary to an understanding of His life and teachings. The events of His life are then studied from the four-fold gospel itself, special attention being given to chronology and harmony. An outline of His teachings, ethical as well as religious, is ad-
duced. The aim is not apologetic but purely historical.

Junior course. One period throughout the year.

4. New Testament Study. This course embraces a study of New Testament Greek. Some book of the New Testament chosen by the class is read in the original. The study of Biblical Greek has its approach from the classic side but special attention is given to the distinctive peculiarities of Hellenistic

Greek as a later and less artificial dialect of the elaborate and polished language of orators and philosophers. The student is familiarized with the vocabulary of the New Testament. Etymology and syntax are systematically studied.

This course is open to all who have had two years of Greek.

One period throughout the year.

Christian Evidences

Professor WENTZ.

A defensive statement of the Christian religion as the divinely revealed religion of redemption. From a consideration of the historical foundations the essence of Christianity is deduced in brief and thus the method of defense is determined. Evidences external and internal are considered. The miraculous element in the New Testament is vindicated. Special reference is made to those elements in our present intellectual environment which tend to make faith difficult. In conclusion, Christianity is compared with the ethnic religions, and the absolute character and the permanent significance of the Christian verities are maintained.

Junior course. Two periods, first semester.

Commerce and Finance

Professor MACDONALD

1. History of Commerce. A history of the general development of commerce and finance in the United States, including the history of banking, the growth of corporate industry and manufacturing.

Two periods, first semester.

2. Commercial Law. The legal principles underlying and governing business transactions of every variety; contracts, partnerships, corporations, etc., from the viewpoint of organization, rights and liabilities.

Two periods, second semester.

3. **Statistics.** The elements of statistical method such as find their practical application in the problems of price, wages, labor, and social data in general, as these affect the economic world.

4. **Finance.** Theory of accounts, banking methods, reserve funds, dividends, taxation and distribution of wealth.

5. **Investments.** This course aims to enable the student to analyze securities so as to judge intelligently of their value; such as stocks, bonds, insurance, etc.

Courses 3, 4 and 5 cover two periods, extending through the year. Course 4 deals with business methods, Course 5 with business instruments, and Course 3 with the social and economic data which cause fluctuations in stocks, bonds, etc. The general aim is to give a comprehensive view of the factors entering into practical finance.

History

Professor WENTZ.

1. **Political History of Modern Europe.** The essential landmarks of ancient and mediaeval history are recalled and fixed definitely in mind and a brief introductory survey is given of the civilization of Europe at the end of the Middle Ages. Then beginning with the Protestant Reformation the course of the historical development of modern Europe is traced by a thorough study of the Modern Period in connection with Schwill's Political History of Modern Europe, the aim being to develop the general background of historical knowledge and to introduce the student to methods of college historical study.

Freshman course. Two periods throughout the year.

2. **Advanced Course in English History.** After a rapid introductory survey of the Anglo-Saxon period, the course begins with the Norman conquest and deals with the details of historical development down to the present time. Stress is laid upon such phases of English history as will specially aid the student to

understand the modern political development in continental Europe and in the United States. The materials of the study include text-books, lectures, secondary authorities, and sources, with frequent discussions of assigned readings.

Three periods, first semester. Given in alternate years with Course 4.

Prerequisite, 1.

3. Advanced Course in United States History. This course comprises a study in the epochs of our national history. An effort is made to discern the social and economic forces that have been operative in the development of the republic and thus lead to an understanding of the national problems of the present. Much attention is given also to American biography, and biographical essays, sketches of epochal events, and frequent reports on assigned topics are required.

Three periods, second semester. Given in alternate years with Course 5.

Prerequisite, 1.

4. The History of the German Empire and its Present Organization. This study begins with the changes in the political map of Europe after the Congress of Vienna and traces the gradual nationalization and unification of Germany. It concludes with a detailed study of the present organization of the Empire and an examination of the political, religious, and economic conditions of the present day. The characteristic phenomena are constantly culled from the sources.

Three periods, first semester. Given in alternate years with Course 2. [Omitted 1914-15]

Prerequisite, 1.

5. History of Civilization. This course presupposes a knowledge of the facts and events of history and makes a study of the growth of historical ideas. The forces that have moved men and nations are sought out and the causes which have operated to direct the tendencies of peoples and to develop institutions are set forth. The unity and continuity of history are developed.

The course leads first through the history of ancient and mediaeval civilization and then to the study of modern and contemporary civilization. The aim here is to analyze the constitutive elements of our own civilization, to lead the student to a thorough understanding of the general trend of modern times and thus enable him to determine his relation to the world society of today.

Three periods, second semester. Given in alternate years with Course 3. [Omitted 1914-15.]

Prerequisite, 1.

Philosophy

PROFESSOR SANDERS.

1. Psychology. A course in general psychology which aims to acquaint the student with the phenomena of mind, the methods of psychological investigation and the practical bearing of the various mental functions on the problems of ethics, pedagogy, etc.

Sophomore course. Two periods, first semester.

2. Introduction to Philosophy. The course in general psychology suggests the problems of philosophy. The course in Introduction aims to acquaint the student with the content of philosophy, the origin and development of the various problems, the aim and method of philosophy, the results which have been attained, and its relation to the other departments of human thought.

Sophomore course. Two periods, second semester.

3. Logic. An introductory course in the laws of thought. The evolution of the concept, its development into judgment and inference, the systematic function of classification, the explanatory function of generalization, and the methodology of proof and investigation are studied with a view to securing a foundation for the theory of knowledge and effective scientific method.

Junior course. Two periods, first semester.

4. **Sociology.** A study of the nature of society and its problems. Starting with the psychological factors of sociation, the development of social institutions, the economic and cultural factors of social progress and the elimination of hindrances—evils—are taken up in turn with a view to an understanding of the methods of social improvement.

Juniors and Seniors. Two periods, first semester.

5. **Ethics.** A study of human conduct. The concept of personality and the idea of self-realization, as forming the background of moral judgment, are wrought into a system which explains the origin of the moral motives as well as their implication of God and immortality.

Junior course. Two periods, second semester.

6. **History of Philosophy.**

A **Ancient and Mediaeval Period.** This course traces the rise and progress of reflective thought as it appears among the Greeks and culminates in Scholasticism. Special stress is placed upon the Greek thinkers, with a view to acquiring an understanding of the spirit of philosophy.

Senior course. Three periods, first semester.

B **Modern Period.** This course covers the period from the renaissance to the present time. Special stress is placed upon the great systems. The student is required to read selections from the great thinkers and report on them, the constant aim being to cultivate the philosophising attitude, thus furnishing a basis for independent thought as well as an inspiration to do original thinking.

Senior course. Three periods, second semester.

7. **Philosophy of Religion.** A study of religion as a distinct factor in human development. The aim of the course is to show the nature of religion and to interpret the various forms in which it manifests itself.

Senior course. Two periods, first semester.

8. **Theism.** This is essentially a course in metaphysics.

Beginning with the method of system building, the student is introduced to the meaning of a world-view, the factors which a comprehensive and consistent view must recognize, and the reasons for regarding Theism as the theory which best meets existing requirements.

Senior course. Two periods, second semester.

Prerequisite, 1, 2 and 3.

9. Advanced Logic. A study in epistemology investigating the principles of science with a view to understanding their origin, their validity and their philosophical implications.

Senior course. Two periods, first semester.

Prerequisite, 1, 2 and 3.

Education

Professor SANDERS.

1. History of Education. A study of the most important movements in the history of education, the factors and personages instrumental in bringing about the various steps in the long line of progress.

Three periods throughout the year.

Prerequisite, Philosophy 1 and 2.

2. Pedagogy. A study of the principles of the educative process, the growth of the mind and the laws governing its development.

Three periods throughout the year.

Prerequisite, Philosophy 1, 2 and 3.

3. School Organization and Method of Teaching. A study of the practical problems of organization and the application of principles.

Two periods throughout the year.

Prerequisite, Philosophy, 1, 2 and 3.

Courses 2 and 3 will be given in alternate years.

The State School Code requires of all teachers courses in Psychology, Logic, History of Education, Pedagogy and Ethics.

Political Science

Professor HIMES.

1. Science of Government.

A American Politics. The subject is pursued on the basis of Johnston's American Politics with comments and suggestions for collateral reading. An intelligent acquaintance with present political conditions is aimed at.

B American Government. The principles and structure of government are studied. National and State constitutions are consulted. The annual Presidential Message is discussed.

Senior course. Two periods throughout the year.

2. Economics and Law.

A Economics. The theories of the science are brought, wherever possible, to the test of the student's personal observation and the true nature of the science is thus impressed upon mind. Problems for investigation are assigned to the class with instructions to inquire into actual industrial and social conditions and operations.

B International Law. Lawrence's International Law is used, with occasional lectures on special topics.

Senior course. Three periods throughout the year.

Biology and Hygiene

Professor STAHLEY.

Courses 1 to 6 are given during the Junior and Senior years, and are required in Group V (Biology, Chemistry and Physics) and are elective for the other groups and for partial course students in other years. The Junior work is a general culture course and is calculated to give the student a general understanding of current biological questions. The Senior work is more medical in its cast, and in conjunction with the Junior work, provides an admirable preliminary preparation for the

study of medicine. Students in Municipal Engineering are required to take Course 7.

The work is carried on by lectures, demonstrations, dissections, written descriptions and drawings, quizzes and frequent stated examinations. There are two well-lighted laboratories, provided with all the needed instruments and apparatus.

1. General Biology. This branch acquaints the student with microscopic technique and general laboratory methods, whilst he studies selected types of plants and animals, taken from the lower forms of life. The purpose is to ascertain fundamental facts of structure and life processes, with the significant relationships in the two great kingdoms of organic nature. The course includes a thorough study of the morphology of the cryptogams, thus practically illustrating general Botany in its fundamental features.

First year. Three periods for thirteen weeks.

2. Vertebrate Zoology. Fundamental vertebrate features of structure and function are carefully considered, whilst dissecting type forms, beginning with the lowest vertebrates known, and proceeding through the various classes, culminating with the Mammals; the latter class claiming special attention. Questions relating to comparative morphology and physiology of vertebrate animals are freely discussed.

First year. Three periods for fifteen weeks.

3. Invertebrate Zoology. Representative types in this great group of animals are dissected. The basal plans in organization, with the varying modifications in form and function, are made subjects of practical study.

First year. Three periods for eight weeks.

4. Human Anatomy and Physiology. Special attention is given to osteology, joints, ligaments and muscles. Tramond's preparations, consisting of real bony joints, with accurately placed artificial ligaments, and Azou's dissectible manikin, provide ample facilities for this part of the work. In this, as in all

the branches of the course, physiological processes are constantly discussed.

Second year. Three periods for eighteen weeks.

5. Mammalian Histology. With the aid of prepared microscopic slides, the pupil studies the minute anatomy of the different tissues of the body. He also learns practically how to fix, harden, imbed, section, stain and mount the important tissues.

Second year. Three periods for twelve weeks.

6. Embryology. The principles of the maturation and fertilization of the germ elements are considered. The development of the chick is studied. Entire mounts are made, as well as mounts of serial sections of the incubating egg, from the first hour of incubation to the fifth day, when the organs are practically all formed.

Second year. Three periods a week for six weeks.

7. Sanitation and Bacteriology. This is a course in municipal sanitation. The lecture part of the work is comprised in Course No. 8, second semester. The bacteriology of water analysis is pursued in a well equipped laboratory.

Senior year. Laboratory, three periods for first six weeks. second semester. Lectures, one period for eighteen weeks.

8. Personal and Public Hygiene. During the first semester the questions of the waste and conservation of individual vitality in their application to an efficient citizenship, are discussed. During the second semester consideration is given to those essential principles of public hygiene which are necessary in protecting the health of communities.

Lectures. One period weekly throughout the Senior year.

9. Physical Culture. This end is sought under medical guidance in the Gymnasium during the winter months. A physical examination of each student is made when he enters college and such kinds of gymnastic exercises are prescribed as seem desirable. The purpose is to encourage the promotion of

health and physical vigor as necessary for successful mental application. Since much harm is often done in injudicious physical exercise, special effort is made to advise those who are suffering from defective bodily conditions how they may be helped by hygienic methods and the selection of forms of exercise particularly suited to their case.

Chemistry

Professor BREIDENBAUGH, Mr. STOVER and Mr. DICKSON.

The courses in chemistry are not designed to prepare specialists in any department of the subject, but to give a general training in the science. The successful completion of these courses will prepare the student to enter on post-graduate or professional studies in any leading university, or qualify him for a more successful pursuit of any technical business, or fit him to teach chemistry in secondary schools.

The instructors are in daily attendance during the college term from 8 to 12 and from 1 to 4, except on Saturday afternoons.

1. General Chemistry. No previous acquaintance with the subject is required. Those offering chemistry for admission will be allowed to substitute, as far as is best for the individual, from Course 2. The general principles and the fundamental laws of the science are included in the course which consists of lectures, readings from approved text-books such as Remsen's *College Chemistry*, Newell's *Inorganic Chemistry for Colleges*, and laboratory work of which careful record in note-books is required. There are daily quizzes and frequent examinations. The last several weeks of the course are devoted to a practical review and examination in the determination of a certain number of substances, based on the results of previous study.

Three lectures and six laboratory hours weekly for one year.

2. Qualitative Analysis. The student, following an outline prepared for the purpose, becomes acquainted with the general reactions of the elements of the several groups and from these data

constructs the scheme of analysis which is applied in a number of determinations. There is constant supervision and personal conference over the work. Reference book: Fresenius' *Qualitative Analysis*.

Nine laboratory hours including class work weekly for one year.

Prerequisite, 1.

3. *Quantitative Analysis*. While such lectures as are desirable are given, this is essentially a personal laboratory course. An assigned minimum of work is required. Reference book: Fresenius' *Quantitative Analysis*.

Nine hours of laboratory work weekly for one year.

Prerequisite, 1 and 2.

4. *Organic Chemistry*. Lectures and preparations based on Remsen's *Organic Chemistry* occupy about one half the course, the remainder of the time is given to ultimate and proximate analysis of organic substances and of animal and plant products.

Three lectures and six laboratory hours weekly for one year, four units credit.

Prerequisite, 1 and 2.

5. *Water and Sewage*. Lectures, reading and laboratory work on the character of water supplies and sewage products and their purification.

Two periods for one semester as suits the class.

Prerequisite, 1, 2 and 3.

6. *Cements*. Reading and laboratory work on the nature of cements.

Two periods for one semester as suits.

Prerequisite, 1, 2 and 3.

7. *Special Quantitative Methods*. Students who are qualified, are offered courses in advanced and applied analysis—such as mineral and ore analysis, the examination of food stuffs, etc.

Such number of hours as may be arranged for during Senior year, or during Junior year by such students as have completed other work in the department.

8. Industrial Chemistry. A course of class-room exercise.

Three periods, second semester.

Prerequisite, 1, 2 and 3.

Geology and Mineralogy

Professor BREIDENBAUGH.

1. Dynamical Geology. This course of lectures gives the student an acquaintance with the facts concerning inorganic geology with a discussion of the dynamical agencies which have been operative in bringing the earth to the condition in which we now find it.

Two periods, first semester.

2. Historical Geology. A comprehensive discussion of the principles of evolution with illustrations from historic geology closes the course.

Two periods, second semester.

The student is assigned readings from the text-books of Dana, Le Conte and Chamberlin and Salisbury and other authors.

Field work and the preparation of papers from personal observations give practical application to the work. Frequent examinations are held.

3. Mineralogy. Following a short course of practical work in Crystallography, there is a series of determinations of not less than one hundred minerals by their physical and blowpipe characteristics.

Two periods throughout the year.

Prerequisite, Chemistry 1.

Mathematics and Astronomy

Professor NIXON and Mr. TROXELL.

The courses in mathematics are arranged to give thorough mental discipline; to meet the needs of teachers; to fill the wants of students desiring later to do graduate work in the best universities; to prepare for engineering or other technical

courses. The instruction includes full explanation of all difficult points, free use of blackboard by both instructor and pupil, daily drill and note-book work, checking of results, application of mathematics to practical problems of every day life.

1. **Solid Geometry.** The usual text demonstrations including the relations of planes and lines in space, the properties and mensuration of prisms, pyramids, cylinders and cones, the sphere and spherical triangle; geometric models. **Wentworth and Smith's Solid Geometry.**

Freshman course. Three periods one third of year.

2. **Plane and Spherical Trigonometry.** Fundamental definitions, properties and analytical theory of trigonometric functions, with the usual formulae; theory and principles of logarithms; applications to the solution of various practical problems. **Granville's Plane and Spherical Trigonometry.**

Freshman course. Three periods two thirds of year.

3. **Advanced Algebra.** Undetermined coefficients with applications to series and partial fractions; graphical method of solving equations; determinants with applications to simple equations; the elements of the theory of equations; including the solution of numerical equations by Horner's method. **Wells' Advanced Algebra.**

Sophomore course. Groups I-VI, three periods one-third of year. Groups VII-X, four periods one-third of year.

4. **Plane Analytic Geometry or Elementary Analysis.** The equation and the plotting of the corresponding locus is discussed in general, after which the following topics are studied; line, circle, ellipse, hyperbola, parabola and other curves, their tangents, normals, lengths and areas. **Solid Analytical Geometry, Nicholas' Analytic Geometry; Granville's Elementary Analysis.**

Sophomore course. Groups I-VI, three periods two-thirds of year. Groups VII-X, four periods two-thirds of year.

5. **Differential and Integral Calculus.** The latest and best methods of teaching the Calculus are used. This course pre-

prepares students for work in applied science, for more advanced courses in pure mathematics, and for engineering or other technical courses. Simple practical problems are given throughout that illustrate the theory and at the same time are of interest to the student. These problems do not presuppose an extended knowledge in any branch of science but are based on knowledge that all students in a first course in the calculus are supposed to have in common. Granville's *Differential and Integral Calculus*.

Junior Course. Groups I-VI, three periods, throughout the year. Groups VII-X, four periods throughout the year.

6. *Differential Equations*. This course is based on the *Calculus* of Junior year, and consists of recitations on methods of solution and geometrical interpretation of ordinary and partial differential equations. Cohen's *Differential Equations*.

7. *Solid Analytic Geometry*. This course is based upon the *Analytic Geometry* of Sophomore year, and includes various topics of *Analytic Geometry* of three dimensions. C. Smith's *Solid Geometry*.

8. *Theoretical Mechanics*. This course is based upon the *Calculus* of Junior year, and includes the mathematical treatment of various topics in mechanics. Smith and Longley's *Theoretical Mechanics*.

6, 7 and 8, Senior courses. Three periods throughout the year.

9. *General Astronomy*. This course is designed to meet the needs of students interested in Astronomy. Practical work is included but the emphasis is laid upon the theory. The subject matter is the following: determination of time, latitude and longitude from observation with the transit; computing the time of sunrise, etc., and projecting a lunar eclipse; descriptive Astronomy covering the material contained in Young's *General Astronomy*.

Senior course. Two periods throughout the year.

Physics

Professor PARSONS, MR. CREAGER and MR. WEAVER.

A Elements of Physics. A course covering in an elementary way the general subject of Physics, largely descriptive, and requiring no previous knowledge of the subject. The instruction is given by lectures illustrated by experiment, recitations, problems and laboratory work. This course is designed for those who can devote no more than one year to Physics, and not for those who will pursue the subject further.

Three lectures and three laboratory hours per week throughout the year. 4 units credit. (In some cases the course may be elected without the laboratory work).

1. **General Physics.** Mechanics of solids and fluids, properties of matter and heat. The first part of a course in General Physics extending through two years required of all students in the Scientific and Engineering Groups, and forming the basis of the more specialized courses. The instruction is given by lectures illustrated by experiments, recitations, and problems assigned for work outside of the class. Kimball's College Physics (or some text of equal rank) is used supplemented by considerable additional material. No previous knowledge of the subject is assumed, but a high school course is advantageous as preparation.

Three hours per week throughout the year. Three units credit.

2. **General Laboratory Physics.** A laboratory course in mechanics of solids and fluids, properties of matter and heat, designed to accompany Course 1. (Excepting in special cases the two courses must be taken together). In heat, some experiments on steam and other heat engines, and the heat of solution and chemical reactions, are included. It is desirable, though not required, that the student should have previously had an elementary laboratory course in Physics.

Three or six hours per week throughout the year. One or two units credit.

3. General Physics. Sound, electricity and magnetism and light. A continuation of Course 1, emphasizing particularly electricity and magnetism, and including the fundamentals of photography. Lectures, recitations and problems.

Three hours per week throughout the year. Three units credit.

Prerequisite, Physics 1 and Mathematics 3, 4.

4. Physical Measurements. Laboratory experiments in sound, electricity and magnetism and light. A continuation of Course 2 and designed to accompany Course 3. Some experiments in electrical measurements, diffraction and polarization of light, and photography, are included.

Three to nine hours per week throughout the year. One to three units credit.

5. Mechanics. A lecture course, based on the calculus, treating of statics, dynamics of translation and rotation, moments of inertia, elasticity and vibrations, and accompanied by laboratory work in these subjects.

Two lecture hours and three laboratory hours per week first semester. One and one-half units credit.

Prerequisite Physics 1, 3, Mathematics 5.

6. Electrical Measurements. A lecture and text book course in the theory of electricity and magnetism, electrical measurements and measuring instruments, accompanied by laboratory work. Two hours lecture and class work, first semester. Six hours laboratory work first semester, and three hours per week second semester. Two and one-half units credit.

Prerequisite, Physics 1-4, Mathematics 5.

7. Recent Advances in Physics. Radioactivity, discharge of electricity through gases, the electron theory and other topics. Lectures illustrated by experiments.

Two lectures per week, second semester. One unit credit.

Prerequisite, Physics 1 and 3, and Mathematics 5.

8, 9. Mathematical Physics. Lecture courses in mathemati-

cal Physics for graduate students (or other advanced students). The two courses alternate in successive years, forming together a complete course, but the topics treated may vary from year to year. Such subjects as mechanics, hydrodynamics, the kinetic theory of gases, the theory of sound, electricity and magnetism, physical optics, and the electro-magnetic theory, are treated.

Two or three lectures per week throughout the year.

Prerequisite, Physics 1-4 and Mathematics 5, 6.

10. **Advanced Laboratory Physics.** This comprises all the advanced laboratory not included in the preceding courses, and is designed for graduate students and others specializing in Physics. The experiments or problems assigned are variable and may include research on some assigned topic. The course may be taken through more than one year, credit being given proportional to the work done.

11. **Physics Seminary.** A meeting, for one hour a week throughout the year, of the advanced students, at which papers on assigned topics are presented, current topics are discussed, and reports given of recent work of investigators (obtained from reading the journals). One-half unit per semester.

Civil and Municipal Engineering

Professor KIRBY and MR. SMITH.

This department offers systematically arranged instruction leading to the degree of Bachelor of Science. Students may elect either Civil Engineering, (Group VII), or Municipal Engineering, (Group VIII). See pages 38 and 39.

Attention is called to the fact that the field of Civil Engineering is an increasingly broad one, that Municipal Engineering is but one of its many subdivisions, and that preparation for the successful practice of this or any of the branches of Civil Engineering involves the pursuit of a number of common fundamental studies.

Civil Engineering includes also Topographic, Railroad and Structural Engineering. Students who wish to prepare them-

selves for work along these lines should take Civil Engineering Course (Group VII).

The Municipal Engineering (Sanitary Engineering) Course is offered for those who wish to specialize somewhat in subjects relating more particularly to the problems of sanitation and civic betterment with which the engineering department of a modern city is concerned.

The courses have been so planned as to give the student in addition to his vocational training the foundations of a broad education. It is believed that such preparation is to be preferred to a college course entirely devoted to technical subjects, especially in view of the tendency of men trained as engineers to engage in other related callings, as contracting, manufacturing or commerce.

The sequence of technical subjects is such that those that are comparatively simple and basic lead up to those that are more complex and specialized. It is necessary therefore that students in this department take the course in its entirety. A few of the elementary subjects may be elected by students in other groups whose preparation therefore has been adequate. Special work will be arranged for graduates of this or other colleges.

It is aimed to make the instruction in each subject as practical as is consistent with a broad view of the principles involved. A number of trips are arranged during the course for the inspection of engineering structures in the vicinity, etc. Reports of such visits are prepared by each student from his individual notes. A seminary for the discussion of current engineering topics is designed to afford the student training in the preparation and presentation of written papers and to stimulate his interest in matters pertaining to his chosen profession. A number of the standard engineering periodicals are kept on file for student use and a departmental library is being built up in connection with the library of the college.

1. Mechanical Drawing. Elementary principles, ortho-

graphic, isometric and cabinet projections, simple sections, intersections and developments.

One period. One unit credit.

2. Engineering Drawing. Working drawings, lettering, conventional signs, perspective, etc. This is followed by Descriptive Geometry, which comprises problems relating to the point, line and plane in space, to more complicated cases of sections, intersections and developments, with their applications to engineering and to architecture, the instruction being designed to develop in the student the power of concise reasoning.

Two periods. Two units credit.

3 and 4. Elementary Surveying. The field work is done during a period of three weeks immediately preceding the beginning of the Junior year.* It consists in drill in the use of the more common surveying instruments, supplemented by recitations held at frequent intervals and designed to co-ordinate the instruction. The remainder of the course consists of calculations and mapping, done during term time. The calculations include those necessary in the ordinary office work of a land surveyor, while the mapping comprises plotting the notes of the survey made during the summer, tracing and blueprinting the map, and additional drill in plain lettering. Text-book Tracy's *Plane Surveying*.

Three weeks (145 hours) in August and September. One unit credit.

Two periods, first semester. One and one-half units credit.

5. Mechanics. The first semester is an elementary course including the analytical solution of problems in Statics. The remainder of the year is taken up with a consideration of the stresses in framed structures, with emphasis on graphical solutions. Numerous problems are solved by each student throughout the year.

Three periods. Three units credit.

6. Railroads (A). A course in the mathematics of railroad

*The summer course in 1914 begins at 8 A. M. on Tuesday, August 25th.

curves,—simple, compound, and vertical, including switches and spirals; earthwork calculation and the construction of mass diagrams. Instruction is largely by recitation, involving the solution of many practical problems. Text-book, Raymond's *Field Geometry*.

Three periods, second semester. One and one-half units credit.

7. Cement Testing and Highways. A short laboratory course in which the standard tests of cement and mortar are made and compared, supplemented by lectures on the manufacture and use of cement. Recitations on the design, construction and maintenance of roads and pavements, with especial consideration of the exigencies of present-day traffic.

One period, second semester. One-half unit credit.

8 and 9. Advanced Surveying. Topographic surveying, using a variety of methods and instruments, including the plane table. Adjustment of instruments. The office work includes instruction in topographical drafting and the use of topographic maps, also the treatment of various subjects in higher surveying.

Three weeks (115 hours) in August and September. One unit credit.

Two periods, first semester. One unit credit.

10. Hydraulics. A study of the mechanics of water at rest and in motion, with applications to a variety of problems relating to the pressure of water and to its flow in natural and artificial channels, pipes, etc.

Text-book, Hoskin's *Hydraulics*.

Three periods, first semester. One and one-half units credit.

11. Structural Design. A course in the strength of materials as applied to the design of structures of steel and of wood. Beginning with simple joists under specified loadings the student finally makes all the calculations necessary in the complete design of a number of bridges and roof trusses of various types. The stability of existing structures is also investigated. This

is essentially a course in the mathematics of design and does not include drafting. (See Course 12).

Three periods. Three units credit.

12. Structural Drafting. The making of detail drawings for the component parts of a steel structure. Conformity with the best practice is required in the notation, and the drawings are carefully checked.

Two periods, second semester. One unit credit.

13. Masonry. The design and construction of stone and concrete structures, heavy foundations, arches, walls and dams. Instruction is in part by recitation and includes drafting-room work in the design of several typical structures. Text-book, Baker's Masonry Construction.

Two periods, second semester. One unit credit.

14. Sewerage. Various types of design and construction are discussed in recitation. Plans for a small sewer system are made by each student. Modern methods for the purification and disposal of sewage and garbage. Visits are made to plants under construction and in use. Text-book, Ogden's Sewer Construction; Kinnicutt, Winslow and Pratt's Sewage Disposal.

Two periods, second semester. One unit credit.

15. Water Supply Engineering. The quantity and quality of water from various sources. Works for the collection and storage of water, for its purification and for its distribution. Text-book, Turneaure and Russell's Public Water Supplies.

Two periods, second semester. One unit credit.

16. Railroads (B). The necessary preliminary surveys are made and a short piece of railroad line is located. (This work is done during the summer course in Advanced Surveying, C. E. 8.) Course 16 includes making the plans, calculations, etc., necessary to prepare a full report on the proposed construction including its cost. The design of yards and terminals. Economics of railroad construction.

Two periods, second semester. One unit credit.

17. **Contracts and Specifications.** The elements of contract law as applied to the mutual relations of engineer, contractor and owner. Critical review of typical specifications, and practice in specification writing. Text-book, Kirby's *Elements of Specification Writing*.

One period, second semester. One-half unit credit.

18. **Seminary.**

One period throughout Junior and Senior years. Two units credit.

Mechanical Engineering

Professor KIRBY and MR. SMITH.

For entrance requirements see page 29. Some of these subjects may be elected by students in other groups whose preparation has been adequate.

1. **Shopwork.** Bench and lathe work in wood. Forging of iron and steel. Welding, hardening, tempering, annealing.

One period. One unit credit.

2. **Shopwork.** Machine and bench work in metals. Lectures on modern shop practice.

One period. One unit credit.

3 and 8. **Machine Design.** Drawing board work, with some calculation in proportioning and designing of details and simple machine elements, leading up to the complete design of small pumps, gas engines, dynamos, etc.

Four periods, first semester Junior year. Two units credit.

Two periods Senior year. Two units credit.

4. **Mechanism.** Kinetics. Instantaneous centers, velocity diagrams. Theory of motion of cams, gearing, linkwork and trains of mechanism.

Three periods, second semester. One and one-half units credit.

5. **Steam and Gas Engines.** Technical Thermodynamics.

Construction and use of steam engines and boilers of various types. Steam turbines, heat engines, valves, governors, etc. Includes laboratory tests of power and efficiency.

Three periods. Three units credit.

6. Strength of Materials Laboratory. Tests of resistance to tension, compression, flexure and torsion. Recitations and notebook work.

Two periods first semester. One unit credit.

7. Power Plant Engineering. Power production, fuels, etc. Selection and combination of elements. Economy, financial considerations. Organization and management. Critical study of existing plants. Hydroelectric developments. Visits of inspection reported by each student.

Five periods. Five units credit.

9. Seminary. Written reviews and discussions of current technical articles.

One period through Junior and Senior years. Two units credit in all.

Electrical Engineering

Professors PARSONS and KIRBY.

For entrance requirements see page 29. Some of these subjects may be elected by students in other groups whose preparation has been adequate.

1. Dynamos and Motors. A course in the Elements of Electrical Engineering following Franklin and Esty's Dynamos and Motors, with some supplementary work on the fundamental equations of the magnetic circuit and the dynamo.

Three lectures per week, second semester.

Prerequisite, Physics 1-4 and preferably 6; Mathematics 5.

2. Dynamo Laboratory. An experimental course accompanying E. E. 1, including magnetic induction, hysteresis, power

measurement and power losses, characteristic curves of direct current dynamos and motors, and the operation and control of these machines.

Nine hours per week, second semester. One unit credit.

3. *Dynamo Design.* This is a comparatively elementary course in the drawing of the plans of some existing types of dynamos and motors and the calculations connected with the design.

One period throughout the year. One unit credit.

4. *Alternating Currents.* The theory of alternating currents and alternating current machinery, including a small portion of the subject of electric waves.

Four lectures per week, second semester. Two units credit.

Prerequisite, Mathematics 5, 6, Physics 6, and E. E. 1.

5. *Electric Lighting and Central Stations.* The principles of illumination, photometry, different systems of electric lighting, relative values and efficiency of different methods, following Franklin's *Electric Lighting* with considerable additional work, including central station management and problems of distribution.

Two lectures per week, first semester. One unit credit.

Prerequisite, Physics 6 and E. E. 1, 2.

6. *Electric Railways.* A rather elementary but comprehensive course dealing with the problems of electric railways; types and operation of railway motors for different kinds of service, the mechanics of electric cars and engines, efficiency, operating management, and the generation and distribution of the power.

Two lectures per week, second semester. One unit credit.

Prerequisite, E. E. 1, 2.

7. *Electrical Engineering Laboratory.* Characteristics and running tests of direct and alternating current machines, transformers, etc., and inspection of power plants. This course comprises all advanced Electrical Engineering laboratory work, and may be continued for more than one year.

Four (or three) periods per week throughout the year. Four units credit.

Prerequisite, E. E. 2.

8. Seminary. See Physics 11.

Lectureship

Mrs. Mary G. Stuckenberg has founded a Lectureship in Sociology in honor of her late husband, J. H. W. Stuckenberg, D.D., LL.D., by the terms of which the College will annually have a lecture on some phase of Sociology from the viewpoint of Christian Ethics by specialists in this important field. The lecture will be given at such time as will be convenient to the lecturer chosen for the year.



COLLEGE FREE LECTURE COURSE

Brua Chapel

November 11, President Granville, Gettysburg, Pa.—Subject: Gustavus Adolphus and His Influence on the Art and Science of War.

November 18, J. H. Sieling, M.D., York, Pa.—Subject: Gems of Local History.

December 2, Charles W. Stork, Ph.D., University of Pennsylvania, Philadelphia.—Subject: John Mansfield and Alfred Noyes—Two Contrasting Types in Recent Poetry.

January 13, Lewis M. Haupt, C.E., Philadelphia.—Subject: The Story of a Useful Life.

January 27, Colonel James K. P. Scott, Gettysburg.—Subject: Our Military Policy.

February 24, Prof. C. A. Armstrong, Ph.D., Wesleyan University.—Subject: A Century of Ethics.

GENERAL INFORMATION

Government

The College aims to develop the greatest possible individuality and highest manhood of the student. The prevailing influences are such as tend to lead young men to an active Christian life and to a full realization of their personal responsibilities. The immediate supervision of the students is in the hands of the President and Dean with the class officers.

Class Officers

A professor is appointed as class officer for each class. The members of the class present any request to the Faculty through their class officer and confer with him in personal matters or concerning college affairs.

Student Group Advisers

The head of each department acts as the adviser of all the students having a major in his department. He exercises oversight in the student's selection of electives and in the general character of his work.

Student Council

Without lessening their authority and responsibility, the Faculty have delegated certain duties in government to the student body as an exercise in self-government. The students act through a student council of four Seniors, three Juniors, two Sophomores and one Freshman, elected by their respective classes. The council acts in certain matters of discipline, and in matters concerning the general welfare of the student body is a medium of communication between the students and the Faculty. Hazing in any form is forbidden.

Terms and Vacations

The college year of 35 weeks is divided into two semesters. The first semester begins at 10 A. M. on the third Wednesday in

September and continues, with recesses at Thanksgiving and Christmas, to the first Friday of February: the second semester begins when the first semester ends and continues, with an Easter recess, to Commencement Day, the second Wednesday of June. The closing days of each semester are devoted to examinations.

Attendance

Each student, not residing with his parents, is required to attend on week days a prayer service at 7.40 A. M., in Brua Chapel. On the Lord's Day attendance is required at the morning service in the College Church. Those affiliated with other denominations are, on request of their parents, granted permission to attend elsewhere. Ten per cent. absences are allowed from prayers and church under the rules governing absence from class work.

Each student is allowed individually ten (10) per cent. absences from class-room work in each subject. This allowance is expected to cover all ordinary absences. Fractions are not counted, and absences can not exceed four in any subject during a single semester. These absences are not allowed for the two days preceding nor for the two days following any recess. Absences are not allowed for announced examinations. Such absences can be excused only by action of the Faculty and the substitute examination will be held at such time as the instructor shall appoint. When absent from topical examinations or quizzes the student shall have an examination or quiz at such time as the instructor shall appoint. Unexcused absences count as zero on grade, and if these absences exceed the ten per cent. allowance the student shall take such special examination as the instructor shall direct. A further allowance of absences may be granted to members of athletic teams, musical organizations, participants in literary contests, and to representatives of literary societies for the purpose of attending conventions.

Electives

A student having electives must deposit with the Registrar,

within the first two weeks of the year. A student list of his electives, bearing the endorsement of the student's Group Adviser and of the instructors concerned. After the first week of the year changes in electives may be made only when recommended by the Faculty, under such conditions as may be determined in each case.

Examinations

Examinations are held in all subjects at the close of each semester or when, during the term, a subject is completed. Instructors can hold topical or quiz examinations at the time of any of the regular appointments with the class. Absences from these examinations are governed by the rules given above.

Conditions and Deficiencies

Freshman entrance conditions must be satisfied by the beginning of the Sophomore year.

A student failing in the class work of any semester, in any course, must satisfy the work in such manner and at such time as may be required by the instructor, provided this be done before the close of the next semester.

A student failing in an examination at the end of a semester or on the finishing of any subject, is required to take a second examination at a date appointed by the instructor within the first two weeks of the next semester.

A student who at the beginning of any college year continues deficient in more than one-third of a year's work will be enrolled with the class in which the deficiency occurs. As soon as the deficiency is made up the student is enrolled in the advance class.

A student deficient at the beginning of a year in courses aggregating six units will be required to drop a corresponding number of units in the regular work of the year.

Records

A record of scholarship and deportment, under the care of the Registrar, is kept for each student. The records for scholarship

are A (excellent), B (good), C (fair), D (poor, barely passed), E (failed, but entitled to another examination), F (failed utterly and must repeat with the next class) and Inc. (incomplete).

The student begins each semester with a department grade of 100. Deductions are made from this at the end of each semester (unexcused absences count: from church 5, from prayers 2, from recitation 2, from gymnasium 2).

Reports

A report from the above record is sent to the parents or guardian of each student at the end of each semester. About the middle of each semester notice is given to the student and to his parents or guardian if his work is of low grade or if he has an excessive number of absences.

Requirements for Graduation

Each student completing the prescribed work of any group of studies and in addition enough electives to aggregate at least sixty-four units, will receive the degree pertaining to that group, either Bachelor of Arts or Bachelor of Science, provided, however, that no student in any year shall maintain less than fifteen units per week.

No student will be graduated who is not present at Commencement unless he be excused by the Faculty.

Certificates

Partial and Special Course students as well as those who withdraw before the completion of a full course of study, are entitled to a certificate giving a copy of the college record.

Master's Degree

The degrees of Master of Arts and Master of Science are conferred on those having the corresponding Bachelor's degree from approved colleges according to the following regulations:

1. The Master's degree is conferred upon graduate students on the completion of at least one year of resident work. Such stu-

dents must present to the Faculty Committee on Advanced Degrees, for approval, a plan of advanced studies involving the equivalent of at least twelve units per week. It is recommended that at least one-half of the course be devoted to some one subject.

2. The Master's degree is also conferred on non-resident graduates of this college of three years' standing or more. These must, however, at the beginning of their candidacy arrange with the Faculty Committee on Advanced Degrees (see page 16) a systematic course of study, and must report annually to the head of the department in which the subjects have been chosen.

In either case the candidate must pass examinations satisfactory to his instructors and to the committee. Previous to the final examinations the instructors in charge shall file with the committee a statement of the work done by the candidate. If the report is satisfactory the candidate will be permitted to present himself for final examination. He shall also be required to prepare a thesis upon an approved subject bearing on his principal study. This thesis must be completed and submitted to the committee at least one month prior to the commencement on which the degree is to be conferred, and if accepted, it becomes the property of the college.

Graduates of this college who have devoted at least one year to graduate work in residence at other colleges or universities and have fulfilled the above requirements may be admitted by the Faculty to the Master's degree. It may also be conferred upon college graduates who have completed courses of advanced study in professional schools, provided that the work done be in kind, grade, and amount equivalent to that required of other candidates for the same degree and that it has not been offered to satisfy the requirements for a professional degree.

Honors

The following honors will be awarded at the close of each year:

A Final Honors will be awarded to members of the graduating class meeting the following conditions:

General Final Highest Honors will be awarded to those students who have maintained throughout their four college years the grade A in all of their studies.

General Final Honors will be awarded to those students who have maintained the grade A in at least half of the units of their four college years and have not fallen below the grade B in their other studies.

Students entering at the beginning of the Sophomore year will be awarded the same honors if for three years they meet the above requirements as to grade.

B. Department Final Honors. If the head of any department recommends a student taking a major in that department as having shown special excellence in that work, the student shall be awarded Final Honors in that department provided he does not have a grade below B in more than three courses in other departments.

C. Class Honors for Freshman, Sophomore, Junior and Senior Years. Highest Honors for the designated year will be awarded to those members of these classes who have maintained the grade A in all of their studies throughout the year.

Class Honors for any particular year will be awarded to those members of the class who have maintained the grade A in at least half of the units of the year and do not have a grade below B in any of their studies for the year.

These awards are announced at Commencement and published in the next BULLETIN.

Prizes

Muhlenberg Freshman Prize. The interest of a fund of five hundred dollars, contributed by F. A. Muhlenberg, D.D., LL.D., a former Professor in this college, is given at the close of each year to that member of the Freshman class who is found to have attained the highest grade of scholarship in the Greek and Latin group of studies.

Baum Mathematical Prize. Charles Baum, M.D., Ph.D., Class of 1811, of Philadelphia has contributed five hundred dollars, the income from which is to be given annually to that member of the Sophomore class who shows the greatest proficiency in Mathematics.

Hassler Latin Prize. Mr. Charles W. Hassler furnished a fund, the interest of which is annually expended for the purchase of a Gold Medal, to be presented to that student of the Junior class, who, at the end of the year, shall be rated as the best Latin scholar.

Reddig Oratorical Prize. Mr. Clarence Jacob Reddig, class of 1811, of Shippensburg, contributes annually the sum of twenty-five dollars as an Oratorical Prize, to be contended for in public by the Junior class, on Tuesday of Commencement Week.

Pittsburg Prize in Chemistry. The Pittsburg-Gettysburg Club has established a prize of \$25, to be given to the student who does the best work in Chemistry during the Junior year in those groups in which Chemistry is a major.

Graeff Prize. This prize was founded by Mr. John H. Graeff, class of 1813. The sum of thirty dollars is awarded for the best English Essay from a member of the Senior class, on a subject previously assigned. The decision is made by a committee appointed by the Professor of English.

Prizes in Debate. The Literary Societies of the college provide three prizes of \$36, \$24 and \$15, respectively, for the encouragement of skill in debating. The first contest takes place about the middle of November between teams chosen by the Sophomore and Freshman classes, respectively, and the winning team is rewarded with \$15. The second contest between the winning team and a team from the Junior class, takes place about the middle of March, with \$24 to the winners. The third contest, between the second winners and a team from the Senior class takes place about the middle of May, with a reward of \$36 to the winners. Winners of the \$36 prize are excluded from further competition.

Social Problems in Christianity Prize. A friend gives annually twenty-five dollars in prizes to be contested for by members of the Senior class in a contest on the general subject of the Applications of Christianity to Social Problems. The particular topic is assigned or approved by the Professor of Philosophy. The orations shall be submitted to judges for grading and the writers of the six receiving the highest grades shall deliver them at a public contest on or about the last Thursday in March, at which time another set of judges shall grade the delivery. The prizes, fifteen and ten dollars respectively, shall be awarded on the basis of the average grades."

Elinore Taylor Brewer Greek Prize. The class of 1883 has contributed the sum of five hundred dollars the income from which is annually awarded as a prize to that member of the Sophomore class who shall do the best work in the regular Sophomore Greek course.

No student shall be eligible to any honor or prize unless he has had at our own College all the work required of all students in all groups for the year or years for which the honor or prize is awarded; and (unless substitutions have been approved at the time by special Faculty action) he must have had also all the work required in his group for the year or years for which the honor or prize is awarded.

Scholarships and Aid for Students

A number of endowed scholarships worth \$30 each are awarded annually to worthy and needy students by the Finance Committee of the Board of Trustees. All applications for these scholarships must be in writing and state in full the reasons for the request. Such applications must be handed to the President before October 1st of each college year.

An endowment fund of \$5,000 for the aid of worthy and needy students has been established by Mr. C. H. Boyer as a memorial to his father, Rev. Matthew G. Boyer, D.D., '65, for over eighteen

years a most faithful and efficient member of the Board of Trustees of the College. The income from this fund is divided into ten scholarships of \$25.00 each awarded annually. Applications for this aid must be in writing addressed to Mr. C. H. Boyer, 29 La Salle St., Chicago, Ill., or to the President before October 1st of each college year.

The Parent Education Society of the General Synod controls ten scholarships, worth \$30 each, which are open to young men preparing for the ministry in the Lutheran Church. Applications for the use of these scholarships should be made to the chairman of their Scholarship Committee, J. A. Singmaster, D.D., Gettysburg, Pa.

Mrs. Maria Saltzman of Harrisburg, Pa., has established an endowment fund of \$1000 the income from which is awarded annually as a scholarship to some worthy and needy student. Applications for this aid must be made in writing and must be handed to the President before October 1st of each college year.

A number of other \$30.00 scholarships have been endowed and are controlled by congregations, synods and individuals. The Gettysburg School Board controls such a scholarship established by C. W. Thompson, Esq., of Lebanon, Pa. The authorizations from those controlling these scholarships must be handed to the President before October 1st of each college year.

A considerable number of students earn part of their college fees by caring for halls and class rooms and by doing other work about the campus and buildings. Twenty-five cents an hour is allowed for these services. All applicants for such employment must hand a written request for same to the President before October 1st of each college year.

Upper classmen are employed as proctors and caretakers of the various college buildings and as assistants in the laboratories. One is employed to have charge of the Reading Room. These appointments are made by the Faculty and applications for such positions must be made in writing and must be in the hands of the President before May 1st of the preceding college year.

There are many opportunities in the town of Gettysburg for students to earn money. Rev. S. F. Snyder, Assistant to the President, will be glad to assist those who desire such outside employment. Many students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College. Some of the students are granted allowances by the Athletic Council for work and supervision in the gymnasium and on the Athletic Field. A number of students earn their board by managing student eating clubs, of which there are a large number, or by waiting on the table. Others earn money by acting as newspaper correspondents.

The children of clergymen are allowed a reduction of one-half of the tuition and general fees.

Treasurer's Bills

The bills of the College Treasurer are made out for each semester and include half of each item for the college year. A discount of 5 per cent. is allowed on all dues paid within six weeks of the opening of each semester.

No student will be graduated or receive honorable dismissal until all financial obligations to the College and for class publications and other student interests are settled, except when a student has registered a timely protest with the Faculty and the claim for relief has been allowed.

College Fees

A Registration Fee of \$5.00 is required on entering College and is payable to the Registrar.

The annual charge for tuition and General Fees is \$80. Commencing with 1915-16 this charge will be \$100, of which amount 5 per cent. is to be used for library purposes if needed.

To any one so pursued for a Master's degree the charge for Tuition and General Fees is the same as above when all the instruction has been given by members of the college faculty. Of

this \$25.00 is considered as a Registration Fee and is payable in advance, the balance being due one month previous to the date set for the conferring of the degree.

The annual Reading Room Fee is \$1.50.

The annual Gymnasium and Athletic Fee is \$8.00. This gives the students free admission to all intercollegiate games in Gettysburg.

An Incidental Fee of \$5.00 is charged against each student not rooming in a college dormitory. This charge will be discontinued after June 1915.

Annual Laboratory Fees

Based on three laboratory periods per week these are:

Biological Laboratory	\$14.00
Chemical Laboratory	18.00
Physical Laboratory	12.00
Mineralogy for the course	3.00

In addition to the Chemical Laboratory Fee a charge is made for apparatus broken or not returned in good condition. In the Physical Laboratory an additional charge is made for material used or any damage done to apparatus.

Annual Engineering Fees

Junior year	\$15.00
Senior year	15.00
Summer Course in Surveying	10.00

The College does not maintain a dining hall. The students receive excellent board in clubs and with private families at a cost of from \$3.00 to \$4.00 per week.

Estimated Cost of a Year in College

The expenses of a college student depend largely on the training and habits of the individual. To aid the student rooming in

a college dormitory to calculate the probable cost of a year in college at Gettysburg the following estimates are submitted.

(a) **Items on College Bill**

	Low.	Moderate.	Liberal.
Tuition and General Fees	\$ 80.00	\$ 80.00	\$ 80.00
Reading Room Fee.....	1.50	1.50	1.50
Gymnasium and Athletic Fee....	8.00	8.00	8.00
Room rent and heat (half room) ..	10.00	25.00	40.00
Electric light (half room)	2.10	2.10	4.20
	<hr/>	<hr/>	<hr/>
	\$101.60	\$116.60	\$133.70
Five per cent. discount for prompt payment	5.08	5.83	6.70
	<hr/>	<hr/>	<hr/>
Payable to Treasurer of College...	\$ 96.52	\$110.77	\$127.00

(b) **Other Expenses**

Board for 35 weeks	\$105.00	\$122.50	\$140.00
Laundry	15.00	18.00	20.00
Books and stationery	15.00	18.00	20.00
	<hr/>	<hr/>	<hr/>
Estimated cost for college year	\$231.52	\$269.27	\$307.00

To the above should be added laboratory or engineering fees in case the student takes courses involving such charges.

College Dormitory Rooms

The following rules govern the assignment of dormitory rooms in Pennsylvania Hall and South College Hall.

All rooms shall be declared vacant May 1st of each year. Students desiring to remain in the rooms that they have been occupying shall have that right provided they make written application to the Registrar, on blanks provided by him for that purpose, during the first week in May. During the second week

of May all rooms not reserved in this manner shall be assigned to the members of the several classes in the following order: Juniors, Sophomores, Freshmen. The order of choice in any particular class shall be determined by a drawing for lots conducted by the Registrar and the President of the Student Council. Any rooms not taken are then available for new students entering the following September and will be assigned by the Registrar in the order in which the applications for same (in person, or in writing) are received.

Prospective students are advised to apply for rooms as early as possible. The Registrar will assign rooms by correspondence if he is informed, at least approximately, of the kind of accommodations desired and whether or not a room-mate is wanted. As a rule rooming arrangements made in this way are entirely satisfactory, but if it should so happen that the assigned room does not suit or the room-mates are not congenial, there is usually no difficulty in making a rearrangement satisfactory to all concerned.

The charge for room rent including steam heat is given below for each room in the above-mentioned dormitories and covers the period commencing one week before college opens in September and ending one week after college closes in June, with the exception of the Christmas vacation. The occupants of a room pay equal parts of the rental. Not more than two students are allowed to occupy one room or suite except in the case of some of the larger suites. In Pennsylvania Hall the designations are E for east division, M for middle division, and W for west division. S indicates South College Hall.

\$20.00: 106, 108, W; 120, 122, E.

\$22.00: 105, 107, W; 119, 121, 123, E.

\$26.50: 103, W; 125, E.

\$27.50: 101, W; 127, E.

\$30.00: 340, S.

\$35.00: 111, 117, 118, M; 140 S.

\$37.50: 104, W.

\$12.00: 206, 208, 306, 308, 406, 408, W; 210, 410, M; 220, 222, 224, 320, 322, 324, 420, 422, 424, E.

\$14.00: 205, 207, 305, 307, 405, 407, W; 219, 221, 223, 319, 321, 323, 419, 421, 423, E; 333, 334, 335, 336, 343, 344, 345, 346, S.

\$48.00: 240, S.

\$49.50: 337, 338, 341, 342, S.

\$55.00: 204, 304, 404, W; 211, 217, M; 226, 326, 426, E; 331, 332, 347, 348, S.

\$57.00: 202, 203, 302, 303, 402, 403, W; 225, 228, 325, 328, 425, 428, E.

\$60.00: 201, 301, 401, W; 227, 327, 427, E.

\$77.00: 212, 218, 312, 318, 412, 418, M.

\$82.50: 133, 134, 137, 138, 141, 142, 145, 146, S.

\$88.00: 411, 417, M; (suites of two rooms).

\$93.00: 212 and 214, S; 213 and 215, S; 226 and 227 S; 236 and 238, S; (suites of two rooms).

\$140.00: 233, 245, S; (suites of three rooms).

Rooms 111, 117, 118, 212, 218, 312, 308, 411, 412, 417, 418, M, include a large study and a good-sized bed room. Odd numbers are on south side of building in Pennsylvania Hall and on west side of building in South College Hall.

The scale of prices for the rent of rooms in Cottage Hall has not been fixed but the intention is to make them conform as closely as possible to the room rents charged in South College Hall. The rooms in Cottage Hall will not be open for general inspection until after July 1, 1917, and no applications for rooms there can be considered until after that date as per order of the Board of Trustees.

The cost of electric light is twelve cents per week for each 40 watt Tungsten lamp or its equivalent and is charged on the regular college bills. Any damage done to a room will be charged up against the occupants. Students desiring to change rooms during the school year must obtain permission to do so from the Registrar. Only the Superintendent of Buildings and

Grounds is allowed to change the locks on doors. The occupants of a room will be held personally responsible for the order maintained in that room. Students disregarding Faculty or Student Council Dormitory Regulations will forfeit their rights as occupants. The rooms are furnished throughout by the occupants. A janitress is employed by the College to thoroughly clean and set to rights every student room in the dormitories periodically and this service is without cost to the students. The Registrar will be glad to furnish any additional information about dormitory rooms as well as rooms in the homes of families living in the town.

Student Property

The College disclaims all responsibility for the care or safety of any property belonging to students. With the exception of furniture, mattresses, tacked-down carpets and window shades, any student property left in a dormitory room during the summer vacation must be securely packed in barrels or boxes distinctly marked with the owner's name and the number of his room. This is to insure against possible loss and to facilitate the cleaning of the rooms.

MATERIAL EQUIPMENT

Libraries

The College Library contains 22,052 volumes, besides numerous unbound pamphlets. It is a regular depository of the United States Government and the Government of the State of Pennsylvania. Several hundred volumes of public documents are annually received from these sources.

The Library is available to all students under established regulations. During term time it is open for consultation and the drawing of books seven hours each week day, except on Saturday, when it is open for three hours. The librarian and his assistant are always ready to aid the students. The opportunities for the use of the library are continually being increased by means of a systematic organization and the building up of a complete and attractive library of reference.

The income of a fund invested for the purpose provides for needed additions. After June 1915, 5 per cent. of the money received from tuition and general fees will become available for library purposes.

In view of the great expense involved in the purchase of even the most necessary works in science and literature, the generous aid of the alumni and friends of the college is especially invited to the increase of this fund and to give money for the establishment of new funds.

In the same hall with the College Library are the Libraries of the two Literary Societies. They comprise a large number of well selected and standard volumes, which are annually increased through the income of separate funds. The Philomathean Library contains at present over 7,000 volumes; the Phrenakosmian Library over 7,050 volumes. These libraries are accessible to the members of the societies under their respective regulations,

and are open for the issue of books on Wednesday at 4 P. M., and Saturday at 10 A. M., during term time.

Reading Room

The Reading Room is well supplied with daily and weekly papers and leading literary and scientific periodicals, thus enabling the student to become acquainted with current events and contemporary, scientific, literary and other cultural movements. An annual fee of \$1.50 is charged to each student toward its maintenance.

Laboratories

The Biological Laboratories on the second floor of Recitation Hall consist of two large well-lighted communicating rooms. They are supplied with twenty-five fine microscopes and all the appliances necessary in carrying on the work of the course outlined in the department of biology.

The Chemical Laboratories in the Chemical Laboratory Building, as described on page 98, are amply equipped with all the conveniences and apparatus and supplies that are desirable in the requirements for general and analytical chemistry, including work in organic preparations, proximate analysis, examination of water and other special subjects.

The Physical Laboratory. The lecture room is provided with a large table with sink, water, gas, and electrical connections; apparatus supports, blackboard, charts, black curtains, and a hand-painted screen for stereopticon work. The laboratories, comprising four rooms for general work, besides photographic dark room, store room and storage battery room, and the lecture apparatus room are equipped with modern and carefully selected apparatus for both elementary and advanced work. Alternating and direct electric current is supplied at different points by means of a central switch board, a motor generator and a storage battery. The apparatus includes a Geryk double cylinder oil

immersion air pump, high grade balances, apparatus illustrating mechanical principles and elastic constants, moments of inertia and harmonic motion, a spectrometer, photometer, and stereopticon; and in electricity, D'Arsonval galvanometers, Wheatstone bridges, potentiometer, voltmeter, tangent galvanometer, standards of resistance, capacity, electromotive force and self-induction, ammeters and voltmeters for direct and alternating current (all of the best German or American make); a complete dynamo and motor set illustrating different styles of direct and alternating current machines (induction, synchronous, three phase, etc.); an induction coil giving an 8 inch spark, high frequency coils, electric wave apparatus, and telegraph, telephone, and wireless telegraph outfits, and Kathode ray and X-ray tubes.

The equipment in the Department of Civil Engineering is modern and adequate and is being augmented as necessity demands. The ordinary surveying instruments, such as transit, level, plane-table, traverse boards, etc., are included in the surveying equipment. An Ott planimeter has been recently purchased. The new cement laboratory, with its Riehle tensile briquette machine of 1000 pounds capacity, and a variety of other apparatus, is equipped for making all the standard physical tests of cement.

There has recently been purchased a Riehle universal testing machine of 100,000 pounds capacity. This is used for tensile, compressive, and transverse tests of steel and iron, stone, concrete, etc.

Museum

The Museum contains varied collections of fauna and flora and minerals, all of which are freely used in instruction. The Mineralogical Cabinet contains over 6,000 specimens, including not only very full suites of the more common and more important minerals but also good specimens of many of the rarer minerals. The collection in Lithology numbering 3,000 specimens, and of iron in Metallurgy, have, by recent additions, become

fairly representative in the most important departments of these sciences. The Botanical collection of 6,000 specimens, mainly presented by Miss Elizabeth C. Morris, of Germantown, Pa., is well arranged and contains a full representation of American Flora. A beginning has been made of a Chemical Museum—to contain specimens of raw and manufactured materials in chemical industries. Friends of our institution can greatly aid us by making additions to these collections.

Buildings

Pennsylvania Hall, erected in 1836-38, was remodeled and improved in 1889. It contains eighty-six rooms for students, many of them *en suite*, so that those who may wish to do so can have separate study and sleeping rooms. In this building are also the reading rooms of the Literary Societies and the auditorium used by the College Y. M. C. A. These rooms are all heated by steam and lighted by electricity. Sinks with running water are located on every floor and on the first and third floors are complete lavatories with hot and cold water connected with the college system of water works.

South College, erected in 1897, is a dormitory building of three stories accommodating about fifty students. It is finished entirely in hard wood, is heated with steam, lighted by electricity, has hot and cold water on each floor and lavatories in convenient places. The first floor has eight rooms, each with open fire place, tile hearth and spacious closets. These rooms may be used by one or two occupants, as preferred. On the second floor all rooms are *en suite*, each suite consisting of a study with one bed-room or two. These are also provided with hearths, closets, etc. The third floor is divided into sixteen single rooms.

Cottage Hall was built in 1856 as a double house for professors. In 1913, because of the great need for more dormitory accommodations due to the large increase in the number of students, it was decided to transform the building into a college dormitory in time to admit students at the opening of college in

September, 1914. As it is very advantageously situated on the campus near the main gateway and will be fitted up with all modern conveniences, rooms in this building will be among the most desirable to be had. About thirty-six students will be accommodated.

Glatfelter Hall, erected in 1888-89, is used for general college purposes. It is named in honor of the late P. H. Glatfelter of Spring Grove, Pa., a former Trustee, who with his family have contributed largely to the College. On the first floor are the library and reference rooms, the President's and Registrar's offices and recitation rooms. The second floor has recitation rooms and a large Social Hall. A large museum is on the third floor. In the north wing is the hall of the Philomathean Society. In the south wing the hall of the Phrenakosmian Society. In the basement are the laboratories of the Department of Physics with the recitation rooms directly above. The Civil Engineering Department occupies rooms in this building for recitations and for drafting, beside a portion of the basement which is fitted up as an Engineering Laboratory.

The Brua Memorial Chapel, erected in 1889-90, is the gift of the late Col. John P. Brua, U. S. A., as a memorial to his parents. This building is used for morning prayers, for Commencement exercises, lectures and other occasions requiring a large audience room.

The Chemical Laboratory is a frame building, erected in 1872 and in 1890 converted to its present use. It contains on one floor a large lecture room, an office, store-rooms, chemical-room, balance-room, and two laboratories—providing for one hundred and twelve persons working individually. The building is fitted with the most approved appliances: gas and water at each desk; there are ample hoods, a water-distilling apparatus and large sand bath, and other necessary apparatus. The balance-room contains balances set on pillars especially built for purpose. In the basement and in the attic are store-rooms.

The Astronomical Observatory, erected in 1875, is fur-

nished with an achromatic telescope, having an object glass of six and one-half inches, with a transit instrument, chronometer and other astronomical appliances.

The Gymnasium has on the first floor ample dressing rooms and bathing facilities, and a baseball cage. On the second, or main floor, a class of sixty members can be accommodated for gymnastic drill. This floor is partially enclosed for basketball purposes. The selection of specialized apparatus in light and heavy gymnastics is varied and complete. The Professor's office, where all physical tests and measurements are taken, is also on this floor, and is furnished with a full set of anthropometric apparatus. The gallery has a good seating capacity for spectators.

The gymnasium is open every week day from 10 A. M. to 10 P. M., and the time is apportioned between regular class practice, general practice, and games.

The Boiler House supplies the steam required for heating all the college buildings.

Nixon Athletic Field. Immediately north of the college buildings is the athletic field, which is carefully graded and securely inclosed and covers an area of over seven acres. It affords room and facilitates for all kinds of out-door sports. Recently the Blough running track has been built.

Besides these buildings there are on the campus the President's house, a double house for professors, and four halls erected by Greek Letter Societies.

Plans for New Buildings and Improvements

On account of the increase during the last three years in the number of students the Board of Trustees of the College at their meeting December 30, 1913, decided to inaugurate a campaign for the securing of a fund of \$130,000 for new buildings and improvements. Of this \$75,000 is for a new Science Hall to accommodate the departments of Chemistry, Biology and Geology. In this is also included the cost of fitting up the basement story

of Glatfelter Hall for Physics and Engineering Laboratories. It is then planned to move the present Chemical Laboratory, a substantial one story frame structure, down to the heating plant and equip it as an Engineering Shop. It is estimated that this will cost about \$10,000. A strictly up-to-date new building for the Preparatory Department, containing kitchen and dining hall, will be built at a cost of \$40,000, and also a College Infirmary to care for students who are ill, costing \$5,000.

Class Memorials

As testimonials of their love for their Alma Mater and substantial tokens of gratitude for what she has done for them, the classes indicated below have donated memorials to her as follows:

Class of 1883. On the thirtieth anniversary of their graduation the members of this class donated five hundred dollars to the college, the income from which is awarded annually under the name of the Elinor Taylor Brewer Greek Prize to that Sophomore who does the best work in the regular Sophomore Greek class.

Class of 1893. On the twentieth anniversary of their graduation the members of this class presented the magnificent memorial Gateway at the main entrance to the college campus. The approximate cost of this imposing and artistic structure was \$1500.

Class of 1902. A concrete walk from the entrance into South College Hall to the driveway in front.

Class of 1906. A concrete walk across the entire front of the Pennsylvania Hall connecting the various entrances to same.

Class of 1907. This class paid for the wiring of all the halls and rooms of the Pennsylvania Hall for electric light.

Class of 1912. Erected the center campus light post carrying a cluster of five large electric light globes and put down a

concrete walk extending from this central point to Pennsylvania Hall much of the actual labor being done by the members of the class.

Class of 1913. A concrete walk from Pennsylvania Hall to Glatfelter Hall connecting with the Gymnasium and widened into a plaza in front of the entrance to Glatfelter Hall, two handsome electric light lamp posts being placed on the two outer corners of the plaza. This class also put down part of the concrete walk in front of Stevens Hall.

Class of 1914. A concrete walk from the main gateway to center campus light with three walks extending to Brua Chapel.

Classes of 1916 and 1917. A concrete walk from Stevens Hall to the corner of the Prep campus on Carlisle street. All labor of putting down this walk was done by the members of these classes.



STUDENTS' INTERESTS

Literary Societies

Two literary societies are connected with the college, the Philomathean and the Phrenakosmian. These exert a favorable influence in the intellectual and social culture of their members. The exercises consist of essays, orations, debates and music. The practical acquaintance with parliamentary law here formed makes these societies excellent schools for educating in good citizenship. The halls occupy two wings on the third story of Glatfelter Hall, and are conveniently and handsomely furnished. Their sessions are held every Friday evening. Every student should become an active member in one of these societies.

Debates and Oratorical Contests

During the year there are debates between teams representing the different classes, also between teams of the literary societies. The college is also represented in the Intercollegiate Oratorical Union, being associated with Franklin and Marshall, Ursinus, Muhlenburg and Swarthmore in an annual oratorical contest.

Y. M. C. A.

The Young Men's Christian Association of the College, the second one organized in the world, is an active agent in promoting religious interests among the students. Each Sunday morning and Thursday evening a public meeting is held addressed by invited guests or students. Various Bible and Mission Study classes are organized in college classes, fraternities and other special groups. A salaried Y. M. C. A. Student Secretary has general direction and co-operates with the officers and committees of the association.

Lectures

A series of free public lectures is delivered each year by mem-

bers of the Faculty and others prominent in some field of general interest.

The Y. M. C. A. conducts at very reasonable cost, a series of interesting lectures and musical entertainments. Occasional lectures or addresses by prominent men are delivered before the student body.

Musical Organizations

Active and well trained choral and instrumental musical organizations consisting of a band, an orchestra, a guitar and mandolin club, and a glee club, add to the pleasure of their members and of the audience at their public exhibitions. These clubs usually take a ten days' trip during the winter.

Athletics

The various college athletic sports, football, baseball, basketball, and field sports are well organized. They are recognized as an important part of college life and receive encouragement, but under such regulations as it is believed will prevent them from becoming a possible source of demoralization to the student body and from interfering with the primary work of the institution. The plan under which these sports are conducted gives the opportunity and encourages every student to take part regularly in some out-door exercise.

Students are permitted to participate in any or all branches of athletics unless parents or guardians have notified the Faculty to the contrary.

Press Club

The Press Club is very successful in bringing the various interests of the College before the public through the daily papers.

Publications

THE PENNSYLVANIA COLLEGE BULLETIN is published four times during the year. "The Gettysburgian," under the control

of the student body, is published weekly and makes a specialty of College and alumni news.

"The Y. M. C. A. Hand-Book," issued at the opening of each college year, gives valuable information and suggestions to incoming students.

"The Spectrum," an annual publication of the Junior Class, contains pictorial representations of the College with its various organizations and surroundings as well as useful statistics about students and alumni.

All the periodicals aim at enlarging the means of communication between the college and its graduates, former students and friends. These enterprises are cordially commended to the patronage of those interested in the welfare of the institution.

ADDRESSES OF ALUMNI

The College is anxious to keep in touch with its alumni and ex-students not graduates, and requests that any changes in address should be sent to the Registrar.


TEACHERS

The attention of school-boards and others desiring teachers is called to the fact that it is frequently in the power of the Faculty to recommend suitable candidates. Many graduates fill successfully important positions in public and private institutions. The college course for teachers is arranged to meet the requirements of the School Code of Pennsylvania, thus securing the State Life Certificate for the graduates of the College. See page 58.

FORM OF BEQUEST

I give, bequeath and devise to "The Trustees of Pennsylvania College, of Gettysburg, in the County of Adams," in the State of Pennsylvania, and their successors and assigns forever, the sum of ————— (or shares in the bank of —————, or any

other personal property or real estate, as the case may be), to be applied to the Endowment Fund of the Institution.

 A bequest to a benevolent corporation, to be legal, must be made at least 30 days before the death of the Testator, in Pennsylvania, and 60 days in New York, and should be signed by two witnesses not officially related to the College.

GENERAL ALUMNI ASSOCIATION

The Alumni Association of Pennsylvania College holds its regular annual meeting Wednesday afternoon of Commencement Week. In 1876 the Board of Trustees granted the Association the privilege of nominating six of their number to membership in the Board, and of maintaining this number as vacancies occur.

The officers of the association are:

President:

Charles S. Duncan, Esq., '82 Gettysburg, Pa.

Vice Presidents:

Charles J. Fite, '98 Pittsburgh, Pa.

Prof. Charles H. Huber, '92 Gettysburg, Pa.

Hiram H. Keller, Esq., '01 Doylestown, Pa.

Secretary:

Clyde B. Stover, '94 Gettysburg, Pa.

Treasurer:

H. C. Picking, '79 Gettysburg, Pa.

DISTRICT ALUMNI ASSOCIATIONS

The various district alumni associations are active and potential factors in promoting the interests of the college and bringing the college to the notice of prospective students.

STEVENS HALL, GETTYSBURG ACADEMY

PREPARATORY DEPARTMENT

OF

PENNSYLVANIA COLLEGE

INSTRUCTORS

WILLIAM ANTHONY GRANVILLE, PH.D., LL.D. 3 College Campus
President

REV. CHARLES HENRY HUBER, A.M. 411 Carlisle St.
Principal and Professor of Latin and English

GEORGE MICHAEL RICE, A.M. 213 Springs Ave.
Vice Principal of Stevens Hall and Instructor in German and
Greek

B. DUBBIN OTT, A.B. 42 Stevens Hall
Instructor in Mathematics and Science in Stevens Hall

DOYLE REVERE LEATHERS, B.S. 16 Stevens Hall
Instructor in Latin and English in Stevens Hall

MISS MARY HAY HIMES, A.M. 130 Carlisle St.
Preceptress

STEVENS HALL

Aim of Department

Stevens Hall is located within two minutes' walk of Pennsylvania College. The object of its foundation, which the school has steadily kept in view, was to maintain for our public an Academy under the control of College Authorities. The advantages of such a combination are obvious. To students who desire to prepare for college it offers a course of preparatory instruction under the eyes of their future professors and in the line of college requirements. The school, being open at all times to visits from instructors in the College, and receiving from time to time their counsel, is able to give to those students who desire it just that preparatory study and drill which will lead to the most profitable and creditable work in the college classes. Time is concentrated upon the studies in which it is needed, and students who have satisfied the requirements in the Preparatory Department are admitted to the Freshman class of the College upon the Principal's recommendation without further examination. On the other hand, students who do not expect to enter College, and who desire only an English education, preparatory to business, teaching, etc., find in this school an academy of high grade under the supervision of college professors in a college atmosphere, and with free access to the college libraries. Near association with a college is a stimulus to study, and often awakens a desire for a higher education.

Government

The Preparatory Department, though under the control of the College authorities, has a separate building and campus of its own and is under the special direction of a Principal who is aided by a Vice Principal, two Instructors and a Preceptress.

The school seeks to develop intelligent Christian gentlemen. The discipline aims at making the pupil self-governing, and leading him to habits of self-respect and self-control by train-

ing the judgment, quickening the conscience, and cultivating a delicate sense of honor.

When it is evident that a pupil has no proper appreciation of his opportunities, and is harming the school rather than receiving benefit from it, his parents are asked to remove him.

During study hours students are expected to be in their rooms, which are subject to frequent visits by instructors.

Admission

Students are admitted at any time to the grade for which they have been qualified by previous study. But it is highly important that the student enter the school as early in the course as possible. With the present requirements for admission, a hurried preparation is generally unwise and tends to retard the student's future progress, especially in Latin and Greek. Accurate scholarship, at which the school aims, can hardly be secured without long drill, especially in the languages. Without intending at all to discourage those whose circumstances, rather than their desire, lead them to attempt short preparation, all who can are urged to lay the foundation carefully. An additional year at the beginning is always a gain because of the ease and thoroughness with which future work is done. The fact, however, is recognized that students differ widely in ability and industry, and every opportunity is afforded those who can do so to cover the required work in the shortest possible time.

No examinations are required for admission, the pupil being at once assigned to the class for which his previous studies seem to have fitted him. If, upon trial, it be found that a mistake has been made, the Principal reserves the right to transfer the student to the proper grade.

Students who have advanced sufficiently in Mathematics and the English branches to enter the Freshman class, but have not studied Latin, Greek or German will here find special arrangements made for their rapid advancement. Girls will be received as day scholars. A study hall has been reserved for their exclu-

sive use and they are not obliged to mingle with the general classes except at regular recitation periods. When at school they are under the care of a Preceptress. Refined homes for them can be secured in town at moderate rates. They will be under the care of the Principal, who will be fully informed of their conduct.

Religious Exercises

On Sunday morning the students of the Preparatory Department are required to attend worship with the college instructors and students in the College Church, or such other place of worship as their parents or guardians may designate. A Bible class is conducted by the Principal every Sunday morning and is a part of the regular course of study. Chapel service is held every morning except Saturday.

Courses of Study

The courses of study are designed to prepare students of either sex, who desire to enter College, for the Freshman class, and to give students who do not expect to enter College, so far as it can carry them, a wide intelligence, true culture, and habits of careful study and sound thinking. New and important subjects have been added, and increased attention is given to the lower classes. All students of the school have free access to the College Library, and students over fifteen years of age may join either of the College Literary Societies. There is also a Literary Society conducted by the students of the Preparatory Department.

Arrangements for instruction in music at moderate terms may be made in town without conflicting with regular school work.

A report of the work and conduct of each student is sent home at the end of each semester, and at any other time upon request or when the Principal thinks it desirable.

There are two courses, the Classical (with Greek), and the Scientific or Academic (with German and Physics).

The subjects taught are as follows:

CLASSICAL COURSE

Sub-Freshman Class

Periods per week:

- 5. Latin. Six books of the Aeneid; Prose Composition.
- 5. Greek. Three books of the Iliad; Prose Composition.
- 5. Mathematics. Plane and Solid Geometry Revised (Wentworth and Smith).
- 2. English. College Entrance Requirements as arranged by the "National Conference on Uniform Entrance"; Exercises in English (Buehler).
- 2. History. Grecian History (Myers); Roman History (Myers).
- 1. Composition. (Wooley's Hand-Book).
- 1. Physical Culture.

Upper Middle Class

- 5. *Latin. Six of Cicero's Orations; Prose Composition; Caesar (Completed).
- 4. *Greek. Four books of Xenophon's Anabasis; Prose Composition.
- 5. Mathematics. Algebra for Secondary Schools (Wells).
- 2. English. College Entrance Requirements.
- 2. History. English and French History (Montgomery).
- 1. Composition and Declamation.
- 1. Physical Culture.

Lower Middle Class

- 5. Latin. Comstock's First Latin Book, Second Year Latin with Caesar.
- 4. Greek. White's First Greek Book with Readings.
- 4. Mathematics. Arithmetic Completed (Wentworth); Algebra (Wells).
- 4. English. Grammar (Buehler); College Entrance Requirements.
- 2. History. United States (Montgomery).
- 1. Composition and Declamation.
- 1. Physical Culture.

* Special beginners' classes will be organized this year for students having advanced preparation in other subjects.

Junior Class

4. Latin. Comstock's First Latin Book.
4. Mathematics. Arithmetic (Wentworth).
4. English. Modern English Grammar (Buehler).
3. English. College Entrance Requirements.
4. History and Geography.
1. Composition.
1. Physical Culture.

Spelling is required with the English courses in the four classes.

LATIN SCIENTIFIC COURSE

Sub-Freshman Class

Periods per week.

5. Latin. Six books of the Aeneid; Prose Composition.
3. Physics.
3. German. Grammar; Prose Composition; Reading.
5. Mathematics. Plane and Solid Geometry Revised (Wentworth and Smith).
2. English. College Entrance Requirements as arranged by the "National Conference on Uniform Entrance": Exercises in English (Buehler).
2. History. Grecian History (Myers); Roman History (Myers).
1. Composition. (Wooley's Hand-Book).
1. Physical Culture.

Upper Middle Class

5. *Latin. Six of Cicero's Orations; Prose Composition; Caesar Completed.
4. *German. Vos's Essentials and Reading.
5. Mathematics. Algebra for Secondary Schools (Wells).
2. English. College Entrance Requirements.
2. History. English and French History (Montgomery).
1. Composition and Declamation.
1. Physical Culture.

* Special beginners' classes will be organized this year for students having advanced preparation in other subjects.

Lower Middle Class

5. Latin. Comstock's First Latin Book; Second Year Latin with Caesar.
4. German. Vos's Essentials.
4. Mathematics. Arithmetic Completed (Wentworth); Algebra (Wells).
4. English. Grammar (Buehler); College Entrance Requirements.
2. History. United States (Montgomery).
1. Composition and Declamation.
1. Physical Culture.

Junior Class

4. Latin. Comstock's First Latin Book.
4. Mathematics. Arithmetic (Wentworth).
4. English. Modern English Grammar (Buehler).
3. English. College Entrance Requirements.
4. History and Geography.
1. Composition.
1. Physical Culture.

Spelling is required with the English courses in the four classes.

Business

A course of instruction is given in Book-keeping when desired. This course is intended to fit young men for a business career.

Physical Exercise

The building is surrounded with large and pleasant grounds adapted to football, baseball, tennis and other out-door sports; and in addition to this the students enjoy all the privileges and instruction of the College Gymnasium.

Buildings and Rooms

The building, located on a slight eminence north of town, is heated throughout by steam, lighted by electricity and supplied with pure artesian water. A comfortable toilet room has been

placed on the first floor. The rooms on the third floor are now arranged *en suite* with a broad archway separating the study and sleeping apartments. On the second floor the rooms are separate.

The rooms are furnished with heavy oak wardrobes, bookcases, washstands, tables and chairs. Iron enameled beds, complete with springs and mattresses, are also provided. Two students occupy two rooms, one for studying, the other for sleeping. The rooms are furnished with two single bedsteads, mattresses, chairs, table, bookcase, clothes closet, window curtains and washstand. The other articles needed for the rooms, and to be furnished by the occupants, are as follows: Washbowl and pitcher, mirror, slop pail, and carpet. The carpet for the third floor study room is 10½ by 10½, sleeping room 10½ by 11, for a second floor study room 10 by 12½. Each student must also be provided with towels, four sheets for single bed, two pillow slips, a spread, comforts and blankets, and feather pillow.

Expenses

	First Semester	Second Semester
Tuition and General Fees	\$32.00	\$32.00
Room-rent, use of furniture, and steam heat and light	19.20	19.20
Gymnasium fee	3.00	3.00
*Athletic fee	3.00	5.00
Total	\$57.20	\$57.20

Beginners' classes in Latin, Greek and German will be organized during the first week in April. Students entering the school at this time are charged two-thirds of the fees for the second semester.

Students do not board in the building, but in clubs and private families at a cost of from \$2.50 to \$3.50 a week. Washing is

* By payment of this fee students are entitled to free admission to all inter-collegiate contests. Students who do not feel able to pay the fee can be excused by making application to the Athletic Council.

about \$1.75 a month. A deposit of one dollar will be required at the beginning of the year to insure the return of keys and the proper care of the room. This will be returned to the student at the end of the year if no damage has been sustained. Day students are charged for tuition, general fees and the athletic fee but the gymnasium fee is optional.

A discount of five (5) per cent. is allowed on all dues paid within six weeks of the opening of each semester. Money entrusted to the Principal for the use of students will be expended as desired.

For further information address,

REV. CHARLES H. HUBER, A.M., *Principal*.

STUDENTS IN COLLEGE 1913-14

GRADUATE STUDENTS (RESIDENT)

Virginia Marion Beard	Gettysburg
Paul Snyder Creager	Gettysburg
George Heck Hummel	Harrisburg
Doyle Revere Leathers	Gettysburg

SENIOR CLASS

Candidates for the Degree of Bachelor of Arts

Group			
Clyde Lower Bream	2	Gettysburg	202 Carlisle St.
Raymond Lewis Carbaugh	1	Biglerville	338
Carl Cheston Dreibelbis	1	Bloomsburg	331
John Ward Fisher	1	Cumberland Valley	218
Raymond Edward Haas	1	Ardmore	422
Clement Roscoe Hoffman	1	Gettysburg	166 Carlisle St.
Spurgeon Milton Keeny	1	Shrewsbury	418
Frank Henry Kramer	1	West Hoboken	424
James Enfield Leaman	1	Carlisle	203
John Roy Lovell	1	Glasgow	201
Monroe Eugene Miller	1	Millersburg	419-420
Oscar Berger Noren	1	Bridgeport, Conn.	Observatory
Glenn Fox Poffinberger	1	Highfield	418
Titus Calvin Rohrbaugh	1	Porter's Siding	207
Charles Henry Shauck	1	York	107
Marion Jean Sheely	2	Gettysburg	143 Springs Ave.
Thomas Leslie Smith	2	Newport	341
Alfred Towne Sutcliffe	1	Hummelstown	218
Marguerite Eleanor Weaver	2	Gettysburg	66 W. High St.
Adolph C. Weidenbach	2	Heidelberg, Germany	Stevens Hall
Samuel Evaristus Wicker	1	Altoona	143 N. Washington St.
Robert Jacob Wolf	1	Harrisburg	233

Candidates for the Degree of Bachelor of Science

Victor Earl Amspacher	3	North York	125
Clinton William Beard	3	Gettysburg	209 N. Washington St.
Claude Francis Beegle	4	Gettysburg	71 Hanover St.
Chester Franklin Coleman	4	Steelton	347
Frederick Bowman Dapp	3	Harrisburg	133
Norman Edward Diehl	3	Clearspring, Md.	347
Edgar McCreary Faber	4	Gettysburg	28 Chambersburg St.

George Henry Haberlen	3	Latrobe	417
John Franklin Houck, Jr.	3	Heidlersburg	418
George Edgar Miller	3	Gettysburg	150 York St.
John Croft Myers	6	Marion	142
Oliver Kane Reed	5	Lansdale	235-237
John Reigle Rupp	3	Gettysburg	215 N. Washington St.
William Henry Sandlas	7	W. Forest Park, Md.	31 W. Water St
George Harrison Schaeffer	3	Leetonia, O.	211
Samuel Kline Spicher	4	Thompsontown	328
Otho Leroy Thomas	4	Gettysburg	162 York St.
Ralph Montineau Weaver	4	Gettysburg	66 W. High St.
Lester Stewart Witherow	3	Taneytown, Md.	127
			Seniors, 41

JUNIOR CLASS

Candidates for the Degree of Bachelor of Arts

Charles Wolf Baker	1	New Oxford	101
Mary Louise Bayly ✓	2	Gettysburg	301 York St.
Thomas Clifford Bittle	2	Myersville, Md.	303
Ruth Marguerite Brumbaugh ✓	2	Roaring Spring	321 Carlisle St.
Ann Elizabeth Irene Burford ✓	2	Kittanning	418 Carlisle St.
John Franklin Bussard	2	Myersville, Md.	407
John Butt	2	Gettysburg	123 Carlisle St.
Charles Paul Cessna	1	Rainsburg	218
Willard Herman Cree	2	Blandburg	338
Paul Mower Crider	2	Chambersburg	328
William Charles Day	1	Baltimore, Md.	120
Benjamin Franklin Derr, Jr.	1	Pottsville	108
Edgar Josiah Eyler	1	Thurmont, Md.	119
Clyde Augustus Fasick	2	Mifflintown	227
Richard Freas	1	New York, N. Y.	321
Frank Dean Gable	2	Columbia	348
Robert Edward Garns	1	Chambersburg	121-123
Charles Gruber	1	Philadelphia	118
William Roy Hashinger	1	Coatesville	321
Archie Reed Hollinger	1	Gettysburg	Newville Road
Donald Fisher Ikeler	2	Bloomsburg	245
Lloyd Conover Keefauver	2	Gettysburg	221
Benjamin Frank Kulp	1	Phoenixville	301
James Milton Lotz	1	Altoona	401
Joseph McGill	2	Taurmont, Md.	W. Water St.
Hubert Luther McSherry	1	North Washington	208
Mahlon Steck Miller	1	Philipsburg	111

Viola Elizabeth Miller ✓	2	Gettysburg	267 Baltimore St.
Robert Emery Mock	1	Newmanstown	419-420
Thomas Hay Nixon	1	Gettysburg	1 Campus
Paul William Quay	1	Phoenixville	301
Nina Viola Rudisill ✓	2	Littlestown	Carlisle St.
William Raymond Shank	1	New Oxford	128 York St.
Helen Evangeline Sieber ✓	2	Gettysburg	37 W. Middle St.
Walter Vose Simon	1	Hagerstown, Md.	212
Amos Eli Taylor	1	Glenville	321
John Henry Leader Trout	1	Pittsburgh	122
Virginia Townsend Tudor ✓	2	Gettysburg	117 Springs Ave
John Robert Wagner	2	Stone Church	344
Paul Schleppy Wagner	1	Hazleton	348
Frank Brewster Wickersham	2	Steelton	334
*Homer Henry Wray	2	Leebourg	318
Homer Charles Wright	1	Connellsville	212

Candidates for the Degree of Bachelor of Science

Thomas Gephart Arnold	6	Bedford	323
George Nieman Book	3	Harrisburg	236-238
Edwin Luther Folk	3	York	103
William Nelson Hesse	5	Coatesville	318
Jacob Edward Hollinger, Jr.	3	Carlisle	134
John Grover Houser	3	Ruffsdales	60 Chambersburg St.
James Franklin Kelly	6	Gettysburg	58 York St.
Stephen Henry Liebensberger	3	Hazleton	342
Paul Lang Lotz	4	Baltimore, Md.	428
Luther Kyner Musselman	5	Gettysburg	247 Baltimore St.
Robert Philson, Jr.	6	Berlin	217
Lloyd Ernest Schrack	4	Columbia	342
Clarence Raymond Shook	4	Greencastle	219-221
Winfred Wenner Smith	3	Idaville	312
Charles Herbert Thompson	5	Waynesboro	226
Harvey Samuel Weidner	3	York Springs	326

Juniors 59

SOPHOMORE CLASS

Candidates for the Degree of Bachelor of Arts

Martin Luther Bell	1	Big Spring, Md.	423
Foster David Bittle	1	Myersville, Md.	303
Joseph Warfield Collins	2	Gettysburg	319
Paul Reider Daugherty	1	Philadelphia	305
Eva Dise ✓	2	Lyon Station	135 Buford Ave

*Deceased. Nov. 1913.

Besse Viola Dorsey ✓	2	Motter's, Md.	139 Carlisle St.
Wouter Van Garrett	1	Hanover	202
James Scheaffer Glaes	1	Coatesville	319
William Mervin Grove	2	Red Lion	410
Harrison Franklin Harbach	2	Reading	212
Phares Robert Hershey	2	York	111
Willis Stuart Hinman	1	Lynn, Mass.	305
Frederick William Hofmann	1	Altoona	308
Herman August Keller	1	Baltimore, Md.	426
Amos John Krebs	2	Glenville	403
Glenn Otto Lantz	1	Watsonstown	245
John Max Lentz	1	Gettysburg	3 E. Middle St.
James Enzer McDonald	1	Aspinwall	308
Irving Russell Mayers	1	Littlestown	412
Percy Leroy Mehring	2	Taneytown, Md.	304
Roy Joseph Meyer	1	Wheeling, W. Va.	159 E. Middle St.
Ottis Howard Rechard, Jr.	1	York	304
Sarah Hunter Reen	2	Gettysburg	144 Springs Ave.
Lewis Herman Rehmeier	1	Glen Rock	202
Ordean Rockey	2	Stone Harbor, N. J.	307
Edgar Lloyd Rothfuss	1	Montoursville	425
Andrew Earl Rudisill	1	Hanover	302
Jacob Emanuel Rudisill	1	Gettysburg	Lincoln Ave.
William Raymond Sammel	1	Bedford	411
Chester Stewart Simonton	1	Altoona	402
Lewis Neiffer Snyder	1	Harrisburg	421
John Elmer Spangler	1	Gettysburg	419-420
Hugh Iseman Stitt	1	Ford City	228
Lettie Mabel Stoudt ✓	2	Lenhartsville	135 Buford Ave.
Jonas Andrew Strausbaugh	2	York	404
William Franklin Sunday	1	York	223
Joshua Goheen Swartz	1	Harrisburg	138
John Supplee Tome	1	Maytown	412
Norman Frey Trattner	2	York	306
Edith Esther Watson ✓	2	Frostburg, Md.	209 N. Wash. St.
Clarence George Webner	1	Harrisburg	210
Paul Albert Weidley	1	Altoona	402
Jay Arthur Yagle	2	York	111

Candidates for the Degree of Bachelor of Science

LeRoy Albert	8	Lebanon	241-243
Guy Milton Appler	4	Gettysburg	26 E. High St.
James Glenn Beall	4	Frostburg, Md.	137
Jay William Bringman	4	Gettysburg	Harrisburg Road

Karl Smith Brooks	6	York	325-327
Martin Howard Buehler	5	Germantown	138
James Clyde Cassidy	6	Altoona	401
Alfred Barry Crilly	8	Altoona	241-243
Fred Samuel Faber	8	Gettysburg	28 Chambersburg St.
Owen Lamont Fisher	7	Foltz	207 E. Middle St.
Jacob Frysinger	4	Manchester	118
Russell Hoover Gleim	6	Harrisburg	240
Clarence Victor Hoar	6	Lancaster	341
Ralph William Hoch	4	Reading	242
Fritz Draper Hurd	5	Williamsport, Md.	117
Grover Patterson Keckler	3	Gettysburg	87 Steinwehr Ave.
George Bowen Kendlehart	4	Gettysburg	40 W. Middle St.
Edwin Bower Kennedy	5	Harrisburg	115 Buford Ave.
Edward Pelham Kerper	5	Harrisburg	324
Charles Boyd McCollough	7	Chicora	327
James Eugene Mahaffie	4	Renovo	142
Thomas Anderton Monk, Jr	7	Turtle Creek	222-224
Paul William Neu	5	West Hoboken, N. J.	346
John Spangler Nicholas	5	Washington, D. C.	427
Howard Daniel Oberdick	8	York	346
James Loder Park	5	Indiana	Observatory
William Henry Patrick, Jr.	8	Harrisburg	131 N. Washington St.
Jacob Howard Reinecker	4	Gettysburg	341 York St.
Statton Luther Rice	7	Marysville	233
Ralph Francis Russ	5	Harrisburg	335
George Eicholtz Scheffer	8	Harrisburg	211
Ernest David Schwartz	6	Gettysburg	219-221
Donald Van Dyke Smith	5	Idaville	312
Arthur Guy Taughinbaugh	2	Gettysburg	128 York St.
Will Sentman Taylor	4	Gettysburg	19 E. High St.
George Hedges Trundle	7	Frederick, Md.	119
George Brown Weigle	5	Columbia	345
Marshall Filler Weimer	6	Clearville	235-237
Stanley Manners Wray	5	Leechburg	318
Harry Ellsworth Zerby	5	Steelton	225

Sophomores 83.

FRESHMAN CLASS

Candidates for the Degree of Bachelor of Arts

Morville Ashton	1	Trucksville	31 W. Water St.
Wilbert Hoffman Beachy	2	Somerset	411
Marie Elizabeth Bentz	2	Gettysburg	26 Stevens St.

Fred Wilmer Bietsch	2	Chambersburg	205
Howard Frank Bink	1	Harrisburg	201
George Elmer Bookhultz	1	Washington, D. C.	27 W. Water St.
Minnie May Bortner	2	Glenville	218 N. Stratton St.
Vance Charles Boyd	2	Jeannette	106
John Howard Braunlein	1	Baltimore	426
Willis Raymond Brenneman	1	Spring Grove	408
Raymond Albert Carlson	1	Renovo	211
Charles Slagle Diller	1	New Oxford	27 W. Franklin St.
Charles William Duncan	2	Gettysburg	109 Lincoln Ave.
George Sherman Eckman	1	Kingston	428
James Russell Fink	1	York	312
Henry Earl Fisher	1	Clearfield	417
Chester Traver Hallenbeck	1	Guilanderland Centre, N. Y.	209 N. Washington St.
Ralph Vernon Hankey	2	Apollo	W. Water St.
Clarence Henry Hershey	1	Thomasville	408
Raymond Luther Hesson	1	Taneytown, Md.	204
George Paul Hixson	2	Ruffsedale	31 W. Water St.
Paul Jacob Horick	1	Westminster, Md.	159 E. Middle St.
Robert Edward Keener	1	Dallastown	220
Norman Wilbur Kunkel	1	Dover	405
Edmund Aldine Lakin	2	Hagerstown, Md.	W. Water St.
Robert Luther Lang	2	Williamsburg	129 N. Washington St.
Paul Edward Loudenslager	1	Harrisburg	332
George Edward McIntire	2	Altoona	117
Wallace Morgan McMabb	1	Belleville	204
David Elias Maxwell	1	Jeannette	105
William Howard Peters	1	Dallastown	220
Alexander Preston Ringler	2	Berlin	406
Lawrence Eugene Rost	2	Red Lion	410
Harry Foss Ruth	2	Scottdale	31 W. Water St.
George William Schillinger	1	Harrisburg	332
Frederick Keller Schwartz	2	Worthington	228
Marjorie Louise Sheads ✓	2	Gettysburg	115 S. Stratton St.
Paul Gordon Shenberger	1	Hellam	31 W. Water St.
Charles Morris Sincell	2	Oakland, ---	141
Luther Walter Slifer	1	St. Thomas	143 Chambersburg St.
Earl Allison Smeich	1	York	104
John Houston Snyder	1	Newville	27 W. Water St.
Raymond Clyde Sorrick	2	Williamsburg	129 N. Wash. St.
Lauran Delk Sowers ✓	2	Hagerstown, Md.	W. Water St.
John Allen Spangler, Jr.	2	Spring Grove	128 Lincoln St.

Minerva Irene Taughinbaugh	2	Gettysburg	128 York St.
Charles Leslie Venable	1	Chambersburg	322
Mary Nancy Watson	2	Frostburg	209 N. Washington St.
Jacob Guyon Wierman	1	Arendtsville	168 Carlisle St.
Ira Alvin Williams	1	New Freedom	403
Ida Dorothy Zane	2	Gettysburg	227 Carlisle St.

Candidates for the Degree of Bachelor of Science

Mark Zullinger Bishop	4	Waynesboro	226
Robert Boden	6	Burnham	227
William Andrew Boyson	7	Harrisburg	238
Charles Arthur Brame	5	Idaville	320
William Clifford Campbell	4	Butler	206
James Vernon Cannan	7	Baltimore, Md.	Springs Ave.
Arthur Knisely Clemens	4	Steelton	225
Davis Clifton Daugherty	6	Butler	206
James Thomas Duffy, Jr.	4	Marietta	337
John Reigle Embick	5	Shippensburg	411
Charles Buffington Fager	5	Harrisburg	133
Robert Wareham Flenner	5	Tyrone	417
Robert Nathaniel Foote	10	Ocean City, N. J.	135 Buford, Ave.
John Dixon Geiser	10	Pen Mar	322
David Keyser Glatfelter	5	Columbia	123 Springs Ave.
Frank Glatfelter	6	Columbia	123 Springs Ave.
Rudolph Wheeler Gleichman	6	Baltimore, Md.	407
James Albert Hatch	5	Tarentum	336
Jacob Kremer	6	Tarentum	336
Frederick L. W. Kuhlman	3	Ursina	Springs Ave.
Otto Kunkel	4	Glen Rock	117
Chester Allen Rock Kurtz	10	Rockwood	115 Buford Ave.
Clarence Beck Markel	4	Columbia	343
Myron Reed Huff	4	Gettysburg	27 W. Franklin St.
Harry Theodore Matz	5	Reading	140
Leon Roy Mead	10	Newberry	135 Buford Ave.
Charles Edward Miller	8	Harrisburg	245
Luther Paul Miller	4	Harrisburg	106
Harold Henry Millin	4	Everett	405
Samuel Herbert Newcomer	3	Smithsburg, Md.	161 N. Wash. St.
Adam Leroy Orris	5	Mechanicsburg	146
Emory Clyde Orris	5	Mechanicsburg	146
George Roth	5	Jersey City, N. J.	325
Jacob Carroll Rupp	4	Hanover	405
Lloyd Diehl Schaeffer	6	Hanover	141
Roger Loucks Shearer	9	York Haven	31 W. Water St.

Alton Bassler Snyder	8	Harrisburg	115 Buford Ave.
J. Claire Sowers	4	McKnightstown	168 Carlisle St.
Charles Edwin Springhorn	3	New York, N. Y.	209 N. Wash. St.
John Wesley Steacy, Jr.	4	Columbia	137
Paul Ernst Stermer	7	York	104
Parke Hewitt Wertz	4	Columbia	342
Frank Billmeyer Williams	5	Bloomsburg	245
Albert Henderson Zeilinger	3	Williamsburg	105

Freshmen 95.

PARTIAL COURSE STUDENTS

Elmer Ross Beale	Mifflintown	58 YorkSt.
William George Falconer	Woodland	145
John Hudock	Mt. Carmel	333
Joseph David Kendlehart	Harrisburg	W. Water St.
David Kohler	Lancaster	233
Herman Stanley Mehrling	Philadelphia	203
Erwin Christian Opperman	Harrisburg	334
Henry Etter Starr	Millersburg	150 W. Middle St.
Thomas Lakin Thrasher	Jefferson, Md.	249 Carlisle St.
Ralph Waldo Trimmer	East Berlin	145
Homer Berkley Walker	Orrtanna	242-244
Henry Theophil Weishaar	Williamsport	31 W. Water St.
Lawrence Harvey Jeffery	Baltimore, Md.	240
George Clare Freed	York	217
John William Bream	Cashtown	202 Carlisle St.
Luther Truman Brumbaugh	Roaring Spring	321 Carlisle St.
Frederick John Turek	Glen Lyon	404
Adam F. Geesey, Jr.	York	127 Chambersburg St.

Partial Course 18.



STUDENTS IN THE ACADEMY

SUB-FRESHMAN CLASS

Henry Edward Barbehenn	Gettysburg	218 Stratton St.
David Bronstein	Gettysburg	133 W. High St.
Eugene Etwell Cadman	Millville	45 S. H.
Lillian Mark Crawford	Hagerstown, Md.	63 Lincoln Ave.
John Edwin Konze	Baltimore, Md.	44 S. H.
Elizabeth Donaldson Linn	Orrtanna	70 Stevens St.
Purcell Haydn Little	Hanover	43 S. H.
Harry Calvin Lower	McKnightstown	McKnightstown
Earl Edison Miller	Arendtsville	44 S. H.
Russell Francis Mizell	Gettysburg	State Road
Clarence Burleigh Monk	Turtle Creek	222 E.
George Standish Poust	Hughesville	45 S. H.
Edmund Emanuel Power	Gettysburg	316 Baltimore St.
Edwin Diehl Ross	Gettysburg	239 N. Washington St.
James Andrew Royer	York	39 S. H.
Harry Luther Saul	Trenton, N. J.	41 S. H.
Paul Ritchie Sheffer	Virginia Mills	Virginia Mills
Arthur Kenneth Snyder	Vandergrift	115 Buford Ave.
Paul Emanuel Stock	Gettysburg	219 Baltimore St.
Wade Earl Stonesifer	Emmitsburg, Md.	24 S. H.
Eugene Harold Topper	Gettysburg	527 Baltimore St.
Ralph LaShelle Wagner	Gordon	30 S. H.
Cornelius H. R. Webster	Cumberland, Md.	40 S. H.
Paul Dennis Wierman	Arendtsville	
Roy Clarence Wolf	Gettysburg	Emmitsburg Road Sub-Freshman 25.

UPPER MIDDLE CLASS

Howard Bostock	Wilmerding	228 E.
Ralph Emerson Brame	Idaville	320 E.
Amelia Butt	Gettysburg	123 Carlisle St.
Sara Katherine Butt	Gettysburg	123 Carlisle St.
Boyd Harold Deardorff	Dillsburg	28 S. H.
Samuel Alexander Gilliland	Gettysburg	239 Carlisle St.
Frank Albert Gold	Butler	38 S. H.
Herbert William Howard	Toronto, Canada	32 S. H.
Edgar Worth Kissinger	Gettysburg	Baltimore St.
Russell Franklin Lampe	Altoona	27 S. H.
Fred Leamy	Brooklyn, N. Y.	146 S.

John Clay Leonard	New York, N. Y.	46 S. H.
William Earle Morrison	York	39 S. H.
Lewis Jacob Mummert	Hanover	40 S. H.
Edward George Nace	Hanover	43 S. H.
John Earl Plank	Gettysburg	Fairfield Road
Elmer Allen Rehmeyer	Shrewsbury	33 S. H.
Ruth Alverta Rudisill	Gettysburg	223 Baltimore St.
Alan Donald Stahler	Lebanon	29 S. H.
Howard Henry Weaner	Gettysburg	70 Stevens St.
		Upper Middle 20.

LOWER MIDDLE CLASS

Charles Huber Blocher	Gettysburg	319 Carlisle St.
J. Howard Diehl	Gettysburg	47 Hanover St.
Stanley Leland Dutrow	Blue Ridge Summit	Blue R. Sum.
Henry McClellan Hersh	New Oxford	27 S. H.
John David Lippy, Jr.	Gettysburg	Chambersburg St.
John Munnich	New York	41 S. H.
John Rudisill Myers	Hanover	40 S. H.
Lavinia Ruth Olinger	Gettysburg	34 W. Middle St.
Paul Albert Oyler	Gettysburg	Chambersburg St.
Fred George Pfeffer	Gettysburg	330 Baltimore St.
Paul Henry Sherman	Hanover	46 S. H.
John Monroe Weiser	Gettysburg	161 York St.
Henry Beck Young	Hagerstown, Md.	41 S. H.
		Lower Middle 13.

JUNIOR CLASS

George Draper Bevan	Patterson, N. J.	29 S. H.
Sara Cassatt Neely	Gettysburg	71 Lincoln Ave.
Charles Anderson Warner	Blue Ridge Summit	Blue R. Sum.
		Junior 3.

NUMBER STUDENTS IN COLLEGE 1913-14

Graduates	4
Seniors	41
Juniors	59
Sophomores	83
Freshmen	95
Partial	18
<hr/>	
Collegiate Department	300
Academy	61
<hr/>	
Total	361

COMMENCEMENT 1913

SALUTATORY

Walter Lee Reitz

COMMENCEMENT ORATOR

Professor Albert T. Clay, Ph.D., of Yale University

VALEDICTORY

Frank Adam Kister

GRADUATES

Bachelor of Arts

Robert Bruce Albert
Robert Jay Beck
Homer Bortner
Lee Otis Carbaugh
Paul Snyder Creager
Erle Kerper Diehl
Joseph Dale Diehl
Samuel Reynolds Diehl
John Frederick Dulebohn
Harry Lutz Forscht
Robert Burns Fortenbaugh
George Smith Garman
James Heilman Gross
John Peter Gruver
Earl Justin Haverstick
John Hervey Hege
George Robert Heim
Clyde Leroy Hesson
August Herman Hinternes
George Heck Hummel
James Perry King
Frank Adam Kister
Daniel Jacob Klinedinst

Jack Krissinger Kurtz
John Calvin Lang, Jr.
Paul Yount Livingston
Harold Vane McNair
George Michael Miller
Jacob Russell Nicholas
John Dress Pannell
Ernest Luther Pee
Walter Lee Reitz
Walter L. B. Riethmiller
Bertie Clinton Ritz
James Jay Robbins
B. F. Loder Rosenberry
Lillian Margaret Rowe ✓
Benton Franklin Rudisill
Verna Alverta Schwartz ✓
David Luther Shaffer
Frances Bradley Sheely
Frank Edwin Smith
Amy McCurdy Swope
William Edward Tietbohl
John Wesley Wolfe
Mabel I. Yonson, as of the
class of 1908

Bachelor of Science

Maurice Edgar Baker	Doyle Revere Leathers
John Milton Blocher, Jr.	Paul Markel
Robert Stewart Brown	Ellis Lauderbaugh Mellott
Donald Bruce Coover	Martin Lloyd Peters
Clyde Early Gerberich	Edward Hood Sincell, Jr.
John Christian Haberlen	Harold Hartman Spangler
John Calvin Hartman	John Morris Steck
John Merrill Hepler	Charles Harold Steele
Frederick Craft Hetzel	William Earle Strevig
George Eckels Ringwald Kapp	Robert Byron Walker

HONORS AND PRIZES**HIGHEST HONORS****Junior**

Spurgeon M. Keeney

Sophomore

Charles Gruber

CLASS HONORS**Senior**

Paul S. Creager
Frank A. Kister

Walter L. Reitz
Lillian M. Rowe

Sophomore

Charles P. Cessna

John H. L. Trout

Freshman

Willis N. Hinman

Ottis H. Rechard

Lewis N. Snyder**Græff Prize in English**

John F. Dulebohn

Hassler Prize in Latin

John W. Fisher

Snyder Prizes in Social Problems**First Prize**

Charles H. Shauck

Second Prize

John F. Dulebohn

Pittsburg Prize in Chemistry

Clinton W. Beard

Otho L. Thomas

with honorable mention of

Victor E. Amspacher

Paul Lang Lotz

George H. Schaeffer

Baum Prize in Mathematics

Charles Gruber

with honorable mention of

Winfred W. Smith

Harvey S. Weidner

John H. L. Trout

Amos E. Taylor

Brewer Greek Prize

John H. L. Trout

with honorable mention of

Charles Gruber

Muhlenberg Freshman Prize

Willis S. Hinman

Lewis N. Snyder

with honorable mention of

William T. Mortimer

PRIZES IN DEBATE

First and Second Prizes

Clyde A. Fasick

Spurgeon M. Keeney

Frank H. Kramer

Third Prize

William T. Mortimer

John S. Nicholas

J. Arthur Yagle

Reddig Prize in Oratory

Joseph McGill

HONORARY DEGREES

CONFERRED AT COMMENCEMENT, 1913

Doctor of Divinity

Rev. Lewis HayIndiana, Pa.

Doctor of Laws

Professor Albert T. Clay, Ph.D.....New Haven, Conn.

Master of Arts

I. H. Betz, M.D.....York
 Julius G. C. Knipple, '10.....Gettysburg
 J. Rogers Musselman, '10.....Gettysburg
 Raymond M. Rudy, '12.....Harrisburg
 Rev. Grayson Z. Stup, '96.....Lafayette Hill
 Frank B. WickershamHarrisburg

Master of Science

Victor B. Hausknecht, '09.....Harrisburg
 Guy M. Stock, '08.....Baltimore, Md.
 Lloyd Van Doren, '09.....Lowell, Mass.

STUDENTS IN SUMMER SCHOOL, 1913

(DISCONTINUED)

Maud Allison
 L. Blanche Benner
 Mabel Bollinger
 Irene Fleck
 Annie Major
 Ethel McCreary
 Minnie McGuigan
 Hattie McGrew
 Edith Mickley
 Maud Miller

Helen Pepper
 Kathryn Rinehart
 Margaret R. Scherer
 Rosa Scott
 Rachel Scott
 Howard Spangler
 Blanche Stoops
 Mary E. Wible
 Roy Williams
 K. K. Witherow

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Gettysburg, Pa.

Pennsylvania College

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Published by the College

No. 2

CALENDAR FOR 1914-1915-1916

Session days are indicated by bold-face type.

1914

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12
13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19
20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26
27	28	29	30	25	26	27	28	29	30	31	29	30	27	28	29	30	31

1915

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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3	4	5	6	7	8	9	7	8	9	10	11	12	13	7	8	9	10	11	12	13	4	5	6	7	8	9	10
10	11	12	13	14	15	16	14	15	16	17	18	19	20	14	15	16	17	18	19	20	11	12	13	14	15	16	17
17	18	19	20	21	22	23	21	22	23	24	25	26	27	21	22	23	24	25	26	27	18	19	20	21	22	23	24
24	25	26	27	28	29	30	28	..	..	..	..	..	..	28	29	30	31	..	..	..	25	26	27	28	29	30	..
31	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	..	1	..	1	2	3	4	5	6	..	1	2	3	4	5	6	1	2	3	4	5	6	7
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
23	24	25	26	27	28	29	27	28	29	30	..	..	..	25	26	27	28	29	30	31	29	30	31	..	..	..	..
30	31	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	1	2	3	4	..	..	..	..	1	2	..	1	2	3	4	5	6	..	..	..	1	2	3	4	
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
26	27	28	29	30	..	..	24	25	26	27	28	29	30	28	29	30	..	..	..	..	26	27	28	29	30	31	..
							31	..	..	..	..	..	..								

1916

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	..	1	..	..	1	2	3	4	5	..	..	1	2	3	4	5	6	..	..	..	..	..	1
2	3	4	5	6	7	8	6	7	8	9	10	11	12	5	6	7	8	9	10	11	2	3	4	5	6	7	8
9	10	11	12	13	14	15	13	14	15	16	17	18	19	12	13	14	15	16	17	18	9	10	11	12	13	14	15
16	17	18	19	20	21	22	20	21	22	23	24	25	26	19	20	21	22	23	24	25	16	17	18	19	20	21	22
23	24	25	26	27	28	29	27	28	29	..	..	..	..	26	27	28	29	30	31	..	23	24	25	26	27	28	29
30	31	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..	30	..	..	..	..	..	..

May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	3	4	5	6	..	..	..	..	1	2	3	..	..	..	..	..	1	..	..	1	2	3	4	5	
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
28	29	30	31	..	..	..	25	26	27	28	29	30	..	23	24	25	26	27	28	29	27	28	29	30	31	..	..
..	..	..	..	..	..	..	31	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..

COLLEGE CALENDAR—1914-1915-1916

1914.

September 14, 15. Monday and Tuesday, Entrance Examinations.
 September 16.... Wednesday, 11 A. M., College Year begins.
 September 16.... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 25.... Wednesday, Noon, Thanksgiving Recess begins.
 November 30.... Monday, 1 P. M., Thanksgiving Recess ends.
 December 18.... Friday, Noon, Christmas Recess begins.
 December 29.... Tuesday, 10 A. M., Mid-Winter Meeting of Board
 of Trustees in Harrisburg.

1915.

January 5..... Tuesday, 8 A. M., Christmas Recess ends.
 February 1-6..... Monday to Saturday, Examinations closing First
 Semester.
 February 6..... Saturday, Noon, First Semester ends and Second
 Semester begins.
 April 1..... Thursday, Noon, Easter Recess begins.
 April 7..... Wednesday, 8 A. M., Easter Recess ends.
 April 7..... Wednesday, Founders' Day.
 May 18..... Tuesday, Latin Examination for Hassler Prize.
 May 24-28..... Monday to Friday, Senior Final Examinations.
 June 2-8..... Wednesday to Tuesday, General Final Examina-
 tions.
 June 6..... Sunday, 10.45 A. M., Baccalaureate Sermon.
 June 6..... Sunday, 7 P. M., Discourse before Y. M. C. A.
 June 7..... Monday, 8 P. M., Concert by Combined Musical
 Clubs in Brua Chapel.
 June 7-8..... Monday and Tuesday, Entrance Examinations.
 June 8..... Tuesday, 9 A. M., Annual Meeting of Board of
 Trustees in Gettysburg.
 June 7..... Monday, 2 P. M., Junior Oratorical Contest for
 Reddig Prize, in Brua Chapel.
 June 8..... Tuesday, 10 A. M., Senior Class Day Exercises.
 June 8..... Tuesday, 3 P. M., Baseball Game on Nixon Field.
 June 8..... Tuesday, 8-10 P. M., President's Reception.
 June 9..... Wednesday, 10 A. M., Commencement Exercises.
 June 9..... Wednesday, Noon, Alumni Collation and Annual
 Meeting of Alumni Association.

Summer Vacation.

August 24..... Tuesday, 8 A. M., Course in Surveying begins.
 September 13, 14. Monday and Tuesday, Entrance Examinations.
 September 15.... Wednesday, 11 A. M., College Year begins.
 September 15.... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 25.... Thanksgiving Day. Holiday.
 December 17.... Friday, Noon, Christmas Recess begins.
 December 28.... Tuesday, 1.30 P. M., Mid-Winter Meeting of Board
 of Trustees in Harrisburg.

1916.

January 4..... Tuesday, 8 A. M., Christmas Recess ends.
 January 31 to } Monday to Saturday, Examinations closing First
 February 5.... } Semester.
 February 5..... Saturday, Noon, First Semester ends and Second
 Semester begins.
 April 20..... Thursday, Noon, Easter Recess begins.
 April 26..... Wednesday, 8 A. M., Easter Recess ends.
 June 7..... Wednesday, Commencement.

HISTORICAL

The Charter of Pennsylvania College was approved April 7, 1832. The opening paragraphs are as follows:

"WHEREAS, the literary and scientific institution in Gettysburg, Adams county, in this Commonwealth, known by the name of Gettysburg Gymnasium, is resorted to by a large number of young men from different portions of this State, and elsewhere, and promises to exert a salutary influence in advancing the cause of liberal education, particularly among the German portion of our fellow citizens; therefore,

"SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the Gettysburg Gymnasium be, and hereby is erected into a College, for the education of youth in the learned languages, the arts, sciences and useful literature.

"SECTION 2. And be it further enacted by the authority aforesaid, That the style and title of said College shall be 'Pennsylvania College of Gettysburg' and that it shall be under the management, direction and government of all the subscribers to the funds of said institution, by whose private contributions the said funds have been raised and its present edifice purchased, to wit: John B. McPherson, Thomas C. Miller, Thomas J. Cooper, Samuel Fahnestock, Samuel S. Schmucker, Ernest L. Hazellus, David F. Schaeffer, John G. Morris, Benjamin Kurtz, William Heim, Charles P. Krauth, Frederick D. Schaeffer, J. George Schmucker, J. F. Heyer, Jacob Martin, Abraham Reck, William Ernst, Jacob Medtard, Lewis Eichelberger, Michael Meyerheffer, Jonathan Ruthrauff, Jacob Crigler, John F. Macfarlane, Robert Godloe

Harper, John Herbst, and their successors, to be elected as hereinafter mentioned."

In SECTION 4 we read: "And at elections either for patrons, or trustees, or teachers, or other officers, and in the reception of pupils, no person shall be rejected on account of his conscientious persuasion in matters of religion, provided he shall demean himself in a sober manner, and conform to the rules and regulations of the College."

Two unique features in the establishment of colleges appear in the foundation of this College. First, the College in a large measure grew out of the necessity of properly preparing men for the Theological Seminary, established in 1826 at Gettysburg. This purpose has never lessened, and to-day the institution regards this as an important feature of its work and offers special opportunities to young men preparing themselves for theological studies. Pennsylvania College in its beginnings, its history, and its purpose is closely identified with the Lutheran Church.

The other feature is thus stated in the charter:

"In addition to the customary professorships in other colleges, there shall be in this institution a German professorship, the incumbent of which shall, in addition to such other duties as may be assigned him by the board, instruct such young men as may resort to the institution for the purpose of becoming qualified to be teachers of those primary schools, in which according to the Act passed last session, both German and English are to be taught."

While for a number of years there has been no demand for the teaching of German in elementary schools, the College has given prominence to instruction in the German language and literature and has made a specialty of preparation for the teaching profession. Thus in the foundation of the College the demands of the times were carefully considered, and ever since the aim has been to meet the special educational needs of our people.

Among the founders of the College special mention should be made of S. S. Schmucker, D.D., Professor in the Theological Seminary at Gettysburg, who was the directing spirit in changing the Gettysburg Gymnasium into a College and who presided unofficially over the College for two years. In the State Legislature were a number of friends of the College, prominent among them being Thaddeus Stevens, the father of the public school system of Pennsylvania. Several appropriations were made to the College by the Legislature. This money was spent in the erection of the building known as Pennsylvania Hall.

The College began without endowment, with one small building (now a residence on the south-east corner of Washington and High streets), and a small attendance. But the wholesome enthusiasm of its able instructors, the loyalty and self-sacrifice of its officers, students, and alumni, and the devotion of its friends, have made its history down to the very present one of steady and continuous growth. To-day Pennsylvania College is rated as a college of the highest grade by the United States Bureau of Education and the New York State Board of Regents. Her graduates are admitted to all graduate and professional schools without examination.

Following is a list of the Presidents of the College from its foundation to the present time:

1832-34, Samuel S. Schmucker, D.D., Founder.

1834-50, Charles Philip Krauth, D.D., First President.

1850-68, Henry L. Baugher, D.D., Second President.

1868-84, Milton Valentine, D.D., Third President.

1884-04, Harvey W. McKnight, D.D., LL.D., Fourth President.

1904-10, Samuel G. Hefelbower, Ph.D., D.D., Fifth President.

1910- William A. Granville, Ph.D., LL.D., Sixth President.

LOCATION

Gettysburg is situated in the beautiful rolling area of the red shale belt of Pennsylvania, with its ridges of intrusive rock. A few miles west is the South Mountain ridge of the Blue Mountains. The situation is healthful, and there is a good supply of filtered water. The town is readily reached from all directions by the Philadelphia & Reading and the Western Maryland Railways, which connect at Harrisburg, Pa., and Baltimore, Md., with the great railway systems of Pennsylvania and the South. Washington, Baltimore, Harrisburg, York, Hagerstown, Chambersburg, Carlisle, and other important centers are also connected with Gettysburg by unusually good roads, making it a very important automobile tourist center. The Coast to Coast Lincoln Way passes through Gettysburg.

The historic association of Gettysburg with the Civil War gives the locality great additional interest. The events of the Battle of Gettysburg are recorded in inscriptions on about fourteen hundred monuments and one thousand markers, many of these being of large size and of great artistic merit. The United States Battlefield Commission has made the field accessible by over forty miles of very fine avenues, along which are the markings that show the battle lines. Miles of the rifle pits and other intrenchments have been preserved, as well as scores of lunettes. Here also is the National Cemetery, where Lincoln made his memorable dedicatory speech. Among the thousands of travelers visiting the field are many men of national prominence who often speak to the student body. Such surroundings develop a love of our united country and inspire to better citizenship.

The college buildings were all used as hospitals during and after the Battle of Gettysburg; and the Fiftieth Anniversary of the Battle of Gettysburg Commission had its headquarters on the campus, July 1-4, 1913.

BOARD OF TRUSTEES

Elected.

1873.	HON. GEORGE RYNEAL, JR.....	Martinsburg, W. Va.
1890.	HON. SAMUEL MCC. SWOPE*.....	Gettysburg
1890.	WILLIAM H. DUNBAR, D.D.*.....	Baltimore, Md.
1892.	THOMAS C. BILLHEIMER, D.D.*.....	Gettysburg
1893.	JOHN WAGNER, D.D.*.....	Hazleton
1896.	JOHN B. MCPHERSON, ESQ.....	Boston, Mass.
1897.	WILLIAM A. SHIPMAN, D.D.*.....	Johnstown
1898.	HENRY C. PICKING.....	Gettysburg
1899.	CHARLES F. STIFEL.....	Pittsburgh
1899.	HENRY H. WEBER, D.D.....	York
1902.	CHARLES BAUM, M.D., PH.D.....	Philadelphia
1905.	MILTON H. VALENTINE, D.D.....	Philadelphia
1906.	SAMUEL G. HEFELBOWER, PH.D., D.D.....	Topeka, Kan.
1906.	GEORGE E. NEFF, ESQ.....	York
1907.	LUTHER P. EISENHART, PH.D.....	Princeton, N. J.
1907.	MARTIN H. BUEHLER.....	Baltimore, Md.
1907.	HON. R. WILLIAM BREAM.....	Gettysburg
1907.	FREDERICK H. BLOOMHARDT, M.D.....	Altoona
1907.	ALPHEUS EDWIN WAGNER, D.D.....	Gettysburg
1908.	WILLIAM J. GIES, PH.D., SC.D.....	New York, N. Y.
1908.	WILLIAM L. GLATFELTER.....	Spring Grove
1908.	FRANK E. COLVIN, ESQ.....	Bedford
1908.	JOHN F. DAPP.....	Harrisburg
1908.	GEORGE B. KUNKEL, M.D.....	Harrisburg
1908.	JACOB A. CLUTZ, D.D.....	Gettysburg
1910.	WILLIAM A. GRANVILLE, PH.D., LL.D.	Gettysburg
1910.	CHARLES J. FITE.....	Pittsburgh
1910.	BURTON F. BLOUGH.....	Harrisburg
1912.	CHARLES H. BOYER.....	Chicago, Ill.
1912.	WINSLOW S. PIERCE, ESQ.....	New York, N. Y.
1913.	HON. LUTHER A. BREWER.....	Cedar Rapids, Ia.
1914.	FREDERICK H. KNUBEL, D.D.....	New York, N. Y.
1914.	PERCY D. HOOVER, M.D.....	Waynesboro

Officers.

JOHN F. DAPP.....	President
HON. SAMUEL MCC. SWOPE.....	Vice President
HENRY C. PICKING.....	Secretary and Treasurer

*Designated as Alumni Trustees, having been elected or nominated by the Alumni Association.

STANDING COMMITTEES OF THE BOARD.

Executive Committee.

	Term Expires
MILTON H. VALENTINE, D.D., Chairman.....	1915
THOMAS C. BILLHEIMER, D.D.....	1919
HENRY C. PICKING.....	1918
JACOB A. CLUTZ, D.D.....	1917
WILLIAM L. GLATFELTER	1916
JOHN F. DAPP.....	Ex-officio
WILLIAM A. GRANVILLE, PH.D., LL.D.....	Ex-officio

Finance Committee.

HON. SAMUEL MCC. SWOPE, Chairman
 HENRY C. PICKING
 HON. R. WILLIAM BREAM
 THOMAS C. BILLHEIMER, D.D.
 WILLIAM A. GRANVILLE, PH.D., LL.D.

Committee on Honorary Degrees.

WILLIAM A. GRANVILLE, PH.D., LL.D., Chairman
 WILLIAM H. DUNBAR, D.D.
 THOMAS C. BILLHEIMER, D.D.
 JOHN WAGNER, D.D.
 GEORGE B. KUNKEL, M.D.

Building Committee.

WILLIAM A. GRANVILLE, PH.D., LL.D., Chairman
 HENRY C. PICKING
 GEORGE E. NEFF, ESQ.
 ALPHEUS E. WAGNER, D.D.
 BURTON F. BLOUGH
 JOHN F. DAPP, Ex-officio

College Infirmary Committee.

GEORGE B. KUNKEL, M.D., Chairman
 CHARLES BAUM, M.D., PH.D.
 FREDERICK H. BLOOMHARDT, M.D.

Committee on Charter.

JACOB A. CLUTZ, D.D., Chairman.
 WILLIAM H. DUNBAR, D.D.
 MILTON H. VALENTINE, D.D.
 HON. R. WILLIAM BREAM
 WILLIAM J. GIES, PH.D., SC.D.

THE FACULTY

WILLIAM ANTHONY GRANVILLE, PH.D., LL.D.....	3 Campus
President	
JOHN ANDREW HIMES, LITT.D.....	130 Carlisle St.
Professor Emeritus of English and Political Science	
REV. PHILIP MELANCHTHON BIKLE, PH.D., D.D.....	145 Lincoln Ave.
Dean and Pearson Professor of the Latin Language and Literature	
EDWARD SWOYER BREIDENBAUGH, SC.D.....	227 Carlisle St.
Ockershausen Professor of Chemistry and Mineralogy	
GEORGE DIEHL STAHLEY, A.M., M.D.....	200 Springs Ave.
Dr. Charles H. Graff Professor of Biology and Hygiene	
HENRY BARBER NIXON, PH.D.....	154 Carlisle St.
Alumni Professor of Mathematics and Astronomy	
REV. CHARLES HENRY HUBER, LITT.D.....	411 Carlisle St.
Principal and Professor of Latin and English at Stevens Hall	
KARL JOSEF GRIMM, PH.D.....	228 Carlisle St.
Professor of the German Language and Literature	
REV. CHARLES FINLEY SANDERS, D.D.....	125 Broadway
William Bittinger Professor of Philosophy and Education	
LOUIS ALEXANDER PARSONS, A.M., PH.D.....	263 Springs Ave.
Professor of Physics	
REV. ABDEL ROSS WENTZ, B.D., PH.D.....	88 Seminary
Amanda Rupert Strong Professor of English Bible and Professor of History	
RICHARD SHELTON KIRBY, C.E.....	231 Springs Ave.
Burton F. Blough Professor of Civil Engineering	
M. STEWART MACDONALD, PH.D.....	143 Springs Ave.
Professor of Economics and Political Science	
HENRY ROBINSON SHIPHERD, A.M., PH.D.....	27 E. High St.
Graeff Professor of English	
STEPHEN REMINGTON WING, M.E.....	138 Broadway
Professor of Electrical and Mechanical Engineering	
BENJAMIN FRANKLIN SCHAPPELLE, A.M.....	143 Springs Ave.
Acting Professor of the Romance Languages and Literatures	
ALBERT BILLHEIMER, A.M.....	115 Buford Ave.
Acting Franklin Professor of the Greek Language and Literature	
CLYDE BELL STOVER, A.M.....	24 E. Lincoln St.
Assistant Professor of Chemistry	

THE FACULTY

11

JAMES ALLEN DICKSON, A.M.....	149	Chambersburg St. Instructor in Chemistry
FRED GALLAGHER TROXELL, A.M.....	146	Chambersburg St. Instructor in Mathematics
FRANKLIN WATTLES MOSER, A.M.....	153	Carlisle St. Instructor in English
PAUL SNYDER CREAGER, A.B.....	248	Baltimore St. Assistant in Physics
AUGUST MOLITER (absent; detained by war) Assistant in Modern Languages		
WILLIAM HENRY SANDLAS, B.S.....	31	Water St. Assistant in Civil Engineering. (Summer Course)
.....		Assistant in Engineering
CLIFFORD ROBERTS	52	Seminary Assistant in German
HENRY WOLF BIKLE, A.M., LL.B.....		Philadelphia Lecturer on Constitutional Law
WALTER RAUSCHENBUSCH, D.D., LL.D.....		Rochester, N. Y. Stuckenberg Lecturer on Sociology
GEORGE MICHAEL RICE, A.M.....	213	Springs Ave. Vice Principal of Stevens Hall and Instructor in German and Greek
E. DURBIN OTT, A.B.....	42	Stevens Hall Instructor in Mathematics and Science in Stevens Hall
SPURGEON MILTON KEENY, A.B.....	16	Stevens Hall Instructor in Latin and English in Stevens Hall
ERNEST LUTHER PEE, A.B.....	26	Seminary Instructor in History in Stevens Hall
ROBERT BURNS FORTENBAUGH, A.B.....	47	Seminary Instructor in Greek in Stevens Hall
HOMER CHARLES WRIGHT		Room 331 S. Instructor in Mathematics in Stevens Hall

ADDITIONAL OFFICERS AND EMPLOYEES.

EDWARD SWOYER BREIDENBAUGH, Sc.D.....	227	Carlisle St. Curator of Museum
KARL JOSEF GRIMM, Ph.D.....	228	Carlisle St. Librarian
REV. ABDEL ROSS WENTZ, B.D., Ph.D.....	88	Theological Seminary Chaplain and College Historian

REV. SAMUEL FRANK SNYDER, A.M.....	233 Washington St.
Assistant to the President	
HENRY C. PICKING, A.M.....	Office, Gettysburg National Bank
Treasurer	
CLYDE B. STOVER, A.M.....	24 E. Lincoln St.
Registrar and Secretary of the Faculty	
MISS SALLIE P. KRAUTH	3 Baltimore St.
Assistant Librarian	
MISS MARY HAY HIMES, A.M.....	130 Carlisle St.
Preceptress in Stevens Hall	
MISS RACHEL GRANVILLE	3 Campus
Secretary to the President	
JACOB RUSSELL NICHOLAS, A.B.....	20 Seminary
College Y. M. C. A. Secretary	
HARRY J. O'BRIEN.....	128 Washington St.
Physical Director and Athletic Coach	
IRA PLANK	Gettysburg
Baseball Coach	
HOMER CHARLES WRIGHT.....	Room 331 S.
Proctor in South College	
EDWIN LUTHER FOLK.....	Room 211 P.
Proctor in Pennsylvania Hall	
ROBERT EDWARD GARNES	Room 417 P.
Proctor in Pennsylvania Hall	
THOMAS CLIFFORD BITTLE.....	Room 260 C.
Proctor in Cottage Hall East	
JAY ARTHUR YAGLE	Room 259 C.
Proctor in Cottage Hall West	
JOHN B. HAMILTON.....	128 Washington St.
Superintendent of Buildings and Grounds	
JOHN C. HAMILTON	205 Buford Ave.
Engineer and Watchman	
IVAN P. STONER	26 Carlisle St.
Fireman and Watchman	
MRS. MARY D. MENCHEY.....	3 W. Breckenridge St.
Janitress	
MRS. CARRIE PITTENTURF.....	16 Carlisle St.
Janitress	
JOSEPH CARVER.....	4 Campus
Janitor	
JOSEPH ZINCAN.....	29 Mummasburg St.
Janitor	

COMMITTEES OF THE FACULTY.

Class Advisers.

PROFESSOR STAHLEY, Senior Class
PROFESSOR SANDERS, Junior Class
PROFESSOR NIXON, Sophomore Class
PROFESSOR WENTZ, Freshman Class

Entrance.

BIKLE, NIXON, GRIMM.

Library.

GRANVILLE, GRIMM.

Bulletin.

WENTZ, PARSONS, HUBER.
GRANVILLE, Ex-officio.

Hour Schedule.

BREIDENBAUGH, GRIMM.

Students' Publications.

SHIPHERD, GRIMM, BIKLE.

Supervision of Finance of Students' Publications.

BIKLE, BREIDENBAUGH, SANDERS.

Lectures.

BIKLE, WENTZ.

Advanced Degrees.

GRIMM, BIKLE, STAHLEY.

Representative on Athletic Council.

BILLHEIMER.

Supervision of Social Functions.

KIBBY, BIKLE.

ATHLETIC COUNCIL.

Active Members.

ALBERT BILLHEIMER, '06, Faculty Representative, Chairman.

JOHN F. DAPP, ex-'89, Board Representative.

HARRY L. STAHLER, '82, Alumni Representative.

ARTHUR E. RICE, '04, Alumni Representative, Treasurer.

EDGAR J. EYLER, '15, Student Representative, Secretary.

DONALD F. IKELER, '15, Ex-officio, President of the College Athletic Association.

Advisory Members.

FRANKLIN W. MOSER, '07, Graduate Athletic Manager.

HARRY J. O'BRIEN, Athletic Coach.

STUDENT COUNCIL 1914-1915.

AMOS E. TAYLOR, '15, President.

JOSHUA G. SWARTZ, '16, Vice President.

S. H. LIEBENSBERGER, '15, Corresponding Secretary.

ORDEAN ROCKEY, '16, Recording Secretary.

RAYMOND A. CARLSON, '17, Treasurer.

LLOYD D. SCHAEFFER, '17, Marshal.

RICHARD FREAS, '15.

HUBERT L. MCSHERRY, '15.

WOUTER V. GARRETT, '16.

LUTHER A. GOTWALD, '18, Messenger.

ADMISSION

Applicants for admission are required to present evidence of a good moral character. Applicants from other schools must present certificates of good standing and regular dismissal from the institutions which they have left. No distinctions are made as to sex, except that only male students are admitted to the college dormitories. Women students may secure first-class accommodations in the town with good families and at very reasonable rates by writing to the Registrar.

METHODS OF ADMISSION.

Entrance examinations are held on the Monday and Tuesday preceding the opening of the college year and on the Monday and Tuesday of Commencement Week. The method of admission is either by examinations or by certificates from approved secondary and high schools or from private instructors. Such certificates should state the amount of work done and the time spent on each subject, together with the grades received. Blank admission certificates may be obtained from the Registrar on request. These certificates should be filled out and returned to the Registrar as early as possible before the opening of the college year. The Entrance Committee passes on all applications for admission.

Each applicant for admission should call on the Registrar before or at the opening of College, pay the Registration Fee of \$5.00, be informed as to the action of the Entrance Committee, receive registration blanks, and be instructed in the manner of filling them out. He should arrange his course of study under the guidance of his Group Adviser. He should also submit his schedule of studies, properly endorsed by the Group Adviser, to the Registrar within one week from the opening of College.

REQUIREMENTS FOR ADMISSION.

The scholarship requirement for admission to the Freshman Class is thorough preparation in fifteen units of work in an approved secondary school. A unit is the amount of work represented by five recitations a week for a school year of not less than eight months; i.e., not less than 160 recitations on prepared work or equivalent laboratory work.

PRESCRIBED SUBJECTS FOR ADMISSION.

Of these fifteen units required for admission, the following *five and a half* are required of all candidates:

English	3 units
Mathematics	
A. Algebra	1½ units
B. Plane Geometry	1 unit

ELECTIVE SUBJECTS FOR ADMISSION.

To make up the total of fifteen units the candidate for admission may offer any of the following (under the conditions stated in connection with each Group of College studies, pages 25-28) :

Greek.

- | | |
|---|----------|
| A. Grammar and four books of Xenophon..... | 2 units. |
| B. Composition, three books of Homer, and sight translation | 1 unit. |

Latin.

- | | |
|---|----------|
| A. Grammar and four books of Caesar | 2 units. |
| B. Composition and six books of Cicero..... | 1 unit. |
| C. Six books of Vergil | 1 unit. |

German.

- | | |
|------------------|----------|
| Two years* | 2 units. |
|------------------|----------|

French.

- | | |
|------------------|----------|
| Two years* | 2 units. |
|------------------|----------|

Spanish.

- | | |
|------------------|----------|
| Two years* | 2 units. |
|------------------|----------|

*One unit of language study will be accepted for entrance requirement only when offered as an elective unit.

Mathematics.

C. Advanced Algebra	$\frac{1}{2}$ unit.
D. Solid Geometry	$\frac{1}{2}$ unit.
E. Plane Trigonometry	$\frac{1}{2}$ unit.

Mechanical Drawing.

One year	$\frac{1}{2}$ or 1 unit.
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History.

United States	1 unit.
England	1 unit.
Ancient	1 unit.
Medieval	1 unit.

Geography, Political and Physical1 unit.**Chemistry.**

One year with laboratory work.....	1 unit.
One year without laboratory work.....	$\frac{1}{2}$ unit.

Physics.

One year with laboratory work.....	1 unit.
One year without laboratory work	$\frac{1}{2}$ unit.

Botany.

One year with laboratory work	1 unit.
One year without laboratory work.....	$\frac{1}{2}$ unit.

Zoölogy.

One year with laboratory work.....	1 unit.
One year without laboratory work.....	$\frac{1}{2}$ unit.

Note.—Those offering college work for entrance will substitute other subjects during the college year. In special cases other subjects may be substituted for a portion of the above-named entrance subjects.

DEFICIENCY IN ADMISSION.

To receive the full advantages of a college course a student must have a thorough entrance preparation. Those who are insufficiently prepared for the class they enter do not generally make satisfactory progress in their work. Fifteen units of entrance work are required for unconditional admission to the College; but in some cases a temporary deficiency of slight amount will be permitted. In such cases the entrance deficiency must be satisfied by enrollment in the Preparatory Department or under an approved tutor. Such enrollment must take place at the time of registration in the College. Work thus

done in satisfying an entrance deficiency does not give College credit, but does count as part of the current work of the student in estimating the number of hours in which he may be enrolled.

ADMISSION TO ADVANCED STANDING.

A candidate for advanced standing must satisfy the entrance requirements and in addition must submit evidence of the satisfactory character of the work for which advanced credit is asked. Blanks for such applications are furnished by the Registrar on request.

No one is admitted to the College after the beginning of the Senior year except by special action of the Faculty.

PARTIAL COURSE STUDENTS.

Persons so situated that they are not able to or do not wish to pursue a course of study leading to a degree are admitted as partial course students in such subjects as examination may show they are prepared to pursue with advantage. Such students are required to offer for entrance not less than ten units of preparatory work, and their weekly schedule must include not less than fourteen units of college work.

SPECIAL STUDENTS.

Students of the Theological Seminary are admitted to one or more courses in the College.

The Faculty may also admit to one or more courses such applicants as have special qualifications for the subjects they desire to pursue.

ADMISSION SUBJECTS IN DETAIL

ENGLISH.

In English the study of the following books, recommended by the National Conference on Uniform Entrance Requirements. This is required for 1915-1916.

A. Reasonable familiarity with the substance of the work:

The following are preferred, though alternatives are accepted:

Shakespeare's "Merchant of Venice" and "Julius Caesar"; Addison's "Sir Roger de Coverley Papers"; Goldsmith's "Deserted Village"; Scott's "Ivanhoe" and "Lady of the Lake"; George Eliot's "Silas Marner"; Irving's "Sketch Book"; Tennyson's "Gareth and Lynette," "Lancelot and Elaine," and "Passing of Arthur"; Ruskin's "Sesame and Lilies."

B. More careful and specific study:

Shakespeare's "Macbeth"; Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso"; Washington's "Farewell Address"; Webster's "First Bunker Hill Oration"; Carlyle's "Essay on Burns."

The examination will be in two parts,—one of questions on grammar, rhetoric, and composition, the other of questions on the literature specified above.

In the first part, candidates will be asked specific questions and given particular exercises in word-choice, sentence structure, the principles of paragraphing, and other such matters as a student seeking college standing should be proficient in. The examination in literature will require reasonable familiarity with the books and the authors mentioned under "A" above (or those accepted in substitution for them); and a fairly thorough knowledge and appreciation of the books and the authors named under "B" above.

No candidate will be accepted in English whose work is seriously defective in spelling, punctuation, grammar, choice of words, sentence structure, paragraphing, or other essentials of good usage.

MATHEMATICS.

A. Algebra. The four fundamental operations for rational algebraic expressions; factoring, determination of the highest common factor and least common multiple by factoring; fractions, involution, evolution, radicals, and imaginary quantities. Equations of the first and second degree, ratio and proportion, progressions; binomial theorem for positive integral exponents, and permutations and combinations limited to simple cases.

B. Plane Geometry. Five Books. Demonstration of theorems and constructions, including rectilinear figures, circles, proportional lines, and similar figures; comparison and measurement of surfaces, including triangles, regular polygons, and circles; maxima and minima; originals.

C, D, E. The entrance requirements in Advanced Algebra, Solid Geometry, and Plane Trigonometry are similar to the work done in these subjects in the College courses as given on page 82. For advanced standing in Solid Geometry and Trigonometry, candidates must present note-books and other evidence of thorough work.

The candidate must submit, in addition to the certificate from his instructor, the drawings which he has completed. Full credit will be given for courses of at least six actual hours of drawing per week.

POLITICAL AND PHYSICAL GEOGRAPHY.

The requirement in Political Geography may be met by the study of any good text-book. The requirement in Physical Geography may be met by the study of any text-book equivalent to Gilbert and Brigham's "Introduction to Physical Geography," Davis' "Elementary Physical Geography," or Tarr's "New Physical Geography."

GREEK.

A1. Grammar. The candidate must have familiarized himself with the essentials of grammar, namely, the inflections of substantives and verbs; the syntax of cases, and the moods and tenses of the verb; the simple rules for the composition and derivation of words; the structure of sentences, with particular regard to conditional and relative sentences, indirect discourse, and final clauses.

A2. Xenophon. The first four books of "Anabasis."

B1. Prose Composition. The requirements in prose composition involve the ability to translate into idiomatic Greek, continuous narrative based on Xenophon's "Anabasis," Book II, and other Attic prose of similar difficulty. Due regard must be paid to the principles and practice of accentuation.

B2. Homer. The first three books of the "Iliad" (omitting II, 494-end) or of the "Odyssey," including the Homeric forms, constructions, and prosody.

B3. Sight Translation. One of the most important assets which a student can bring to the study of college Greek is the ability to read easily at sight passages of equal difficulty with the "Anabasis" or the "Hellenica." For this purpose he should memorize as a working vocabulary the principal words in Xenophon and the three books of Homer.

(See page 63 for Beginners' Greek in College).

LATIN.

A1. Grammar. Allen and Greenough's preferred.

A2. Caesar's "Gallic War," Books I-IV.

B1. Prose Composition, including the translation of English passages on Caesar and Cicero.

B2. Six Orations of Cicero, including at least two against Catiline, the one for Archias, and the one for the Manilian Law.

C. Vergil's "Aeneid," Books I-VI, and so much prosody as relates to Latin versification in general and the dactylic hexameter in particular.

Equivalents will be accepted for work done in Sallust or Ovid or other authors of equal rank.

GERMAN.

The requirements in German presuppose a systematic course extending over at least two years of school work.

The candidate is expected to be able to pronounce German clearly and distinctly. He must possess an accurate knowledge of the rudiments of grammar, and should have acquired an elementary German vocabulary. He should be able to translate easy prose and poetry, and to put into German simple English sentences taken from the language of every-day life and easy selections from English narrative prose.

FRENCH.

The requirements in French correspond to those in German, and include the ability to pronounce French accurately, to read easy French prose, to put into French simple English sentences taken from the language of every-day life and easy selections from English narrative prose, and a good knowledge of the rudiments of French grammar.

SPANISH.

The requirements in Spanish correspond to those in French.

MECHANICAL DRAWING.

Drawings, accompanied by a certificate from the instructor, must be submitted. One unit credit will be allowed in cases where not less than two hundred hours of work has been devoted to the subject.

HISTORY.

A. *United States.* Montgomery's "Leading Facts of American History," or its equivalent.

B. *English.* Walker's "Essentials of English History," or its equivalent.

C. *Ancient.* Myers' "Ancient History," or its equivalent.

D. *Medieval and Modern.* Myers' "Medieval and Modern History," or its equivalent.

CHEMISTRY.

The candidate should have such knowledge of the general principles of the science and the properties of the more important elements as may be obtained by a careful study of a text-book of the scope of Remsen's "Introduction to the Study of Chemistry, Briefer Course."

The pupil should have performed in the laboratory experiments in number and general character the equivalent of those given in Remsen's "Introduction." The record of this work must be contained in a note-book describing in the pupil's own words the materials used, the apparatus employed (with drawings), the changes occurring, and the resulting products, with the conclusions properly drawn from the phenomena observed.

This note-book must be presented bearing the following endorsement by the instructor: "This note-book is a true and original record of experiments actually performed by — in — school during the year —."

PHYSICS.


A good high school course, using any standard high school text, covering the simple principles of Physics, descriptive and experimental rather than mathematical, including not less than three class periods and two hours of laboratory work a week for one year.

BOTANY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to text-book and laboratory study of this subject with the aid of Bergen's "Essentials of Botany" or some other standard book of equal merit. Drawings and note-books are required.

ZOÖLOGY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to this subject. Davison's "Practical Zoölogy" or any other standard book of equal grade will be accepted. Note-books and drawings must accompany the certificate.



THE GROUP SYSTEM OF COURSES

The courses of study in the College are arranged in ten groups. These groups are designed to be of equal value in the mental training of the student. This arrangement accomplishes several purposes. It enables the student to select those subjects which are of special value in preparation for subsequent professional study or business. In the first six groups it provides for a general training and broad culture which requires the student not to specialize but to concentrate a fair proportion of his time and energy on one or two related subjects. This gives a fuller training of the mental powers than results from a more diffused and often aimless selection of studies in a too largely elective system.

In addition to these groups of non-professional courses, groups have been established in Civil, Municipal, Mechanical, and Electrical Engineering.

Each group of studies is described in detail on pages 29-59.

VALUE OF A PERIOD AND OF A UNIT OF COLLEGE WORK.

In the statement of courses a period, unless otherwise specified, is a weekly exercise for one year. A unit of college work consists of the equivalent of one weekly exercise, either a recitation, a lecture, a laboratory period of two and a half or three hours, or an assignment of work on which an examination is held. A lecture having connected with it two laboratory hours counts as one unit and a half.

GROUP I. GREEK AND LATIN.

Entrance requirements: English; Mathematics A, B; Latin, A, B, C; Greek A, B, or German, 3 units*; and 2½ elective units.

*Units of German are accepted as meeting the language requirement provided 15 units, including Latin A, B, C, is offered for entrance.

This group is based largely on the long established classical curriculum, not, however, requiring so large an amount of the ancient languages as formerly, thus giving an opportunity for study in other subjects.

This group is specially recommended for those intending to enter the ministerial or legal professions, and also provides the necessary foundation for advanced language study.

This group leads to the degree of Bachelor of Arts.

GROUP II. LATIN AND MODERN LANGUAGES.

Entrance Requirements: English; Mathematics A, B; Latin A, B, C; German or French or Greek A; History 1 unit; and $2\frac{1}{2}$ elective units.

In this group the emphasis is laid on the modern languages and provides for those who wish to make a special study of them.

This group is well adapted to preparation for legal or literary pursuits and for teaching.

This group leads to the degree of Bachelor of Arts.

GROUP III. HISTORY AND POLITICAL SCIENCE.

Entrance Requirements: English, Mathematics A, B; Latin A, B, C; German or French or Spanish or Greek A; History 2 units; and $1\frac{1}{2}$ elective units.

In this group emphasis is laid on the historical studies and on Political Science and Economics.

This group is intended to lay the foundations for professional legal studies, and to prepare for the teaching of these subjects.

This group leads to the degree of Bachelor of Arts.

GROUP IV. CHEMISTRY OR PHYSICS.

Entrance Requirements: English; Mathematics A, B; two languages: Latin A, B, or German or French or Spanish; and $5\frac{1}{2}$ elective units ($4\frac{1}{2}$ if Latin is offered), of which not more than 2 may be in Science.

In this group emphasis is laid on Chemistry and Physics with the requirement that the student shall give special attention to one of these subjects. Sufficient time is devoted to the modern languages to give the student a good command of them.

This is recommended to those who intend to enter on scientific professional studies, or to engage in manufacturing or commercial pursuits, or to teach Chemistry or Physics.

This group leads to the degree of Bachelor of Science.

GROUP V. BIOLOGY, CHEMISTRY, AND PHYSICS.

Pre-Medical Group.

Entrance Requirements: English; Mathematics A, B; two languages: German, French, Spanish, or Latin A, B; and $5\frac{1}{2}$ elective units ($4\frac{1}{2}$ if Latin is offered), of which not more than 2 may be in Science.

In this group the student obtains a good foundation in each of the great divisions of scientific study; and it is recommended to those who intend to teach general Science, and also to those who have in view the study of medicine. Two years' work in the above branches meets the science requirements for entrance into the best medical schools.

This group leads to the degree of Bachelor of Science.

GROUP VI. COMMERCE AND FINANCE.

Entrance Requirements: English; Mathematics A, B; two languages (other than English), one of which must be French or German or Spanish; History 2 units; and sufficient electives to make a total of 15 units.

This group is arranged to meet the needs of those who do not wish to pursue general scientific or literary studies but desire to prepare themselves for commercial or financial pursuits.

This group leads to the degree of Bachelor of Science.

- GROUP VII. CIVIL ENGINEERING.**
GROUP VIII. MUNICIPAL ENGINEERING.
GROUP IX. MECHANICAL ENGINEERING.
GROUP X. ELECTRICAL ENGINEERING.

Entrance Requirements for Groups VII-X: English; Mathematics A, B, D, and E; German; Latin A, or French or Spanish; Science, not more than 2 units; and sufficient electives to make a total of 15 units.

These groups are offered for those who intend either to enter the engineering profession or to engage in other pursuits in which a knowledge of engineering is useful.

These groups lead to the degree of Bachelor of Science.

OUTLINE OF GROUPS

GROUP I.—GREEK AND LATIN.

Group Adviser: Professor Biklé.

Entrance Requirements: English; Mathematics, A, B; Latin A, B, C; Greek A, B, or German 3 units; and $2\frac{1}{2}$ elective units.

This Group is especially recommended for its cultural value and as a preliminary training course for those intending to enter the ministerial, legal, medical, journalistic, or teaching profession, and also provides a foundation for advanced language study.

This Group leads to the degree of **Bachelor of Arts**.

The following Schedule of Studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of units credit given for each semester's work. One unit signifies 2 hours of lecture or class work, or from 5 to 6 hours of laboratory work (or of laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Number	Credit	Number	Credit	
Greek*: Xenophon (Hellenica) Ly-					
sias,	1*	$1\frac{1}{2}$	2*	$1\frac{1}{2}$	63
or Greek*: First Year Greek	A*	$1\frac{1}{2}$	A*	$1\frac{1}{2}$	63
Latin: Livy, Horace (Odes), Cicero					
(De Senectute)	1, 2	$1\frac{1}{2}$	2, 3	$1\frac{1}{2}$	65
English: English Composition	A	1	A	1	60
History: Political History of Modern					
Europe	1	1	1	1	70
English Bible: General Introduction	1	$\frac{1}{2}$	1	$\frac{1}{2}$	69
Mathematics: Solid Geometry, Plane					
and Spherical Trigonometry	1, 2	$1\frac{1}{2}$	2	$1\frac{1}{2}$	82
Chemistry: General Chemistry	1	$1\frac{1}{2}$	1	$1\frac{1}{2}$	80
Total Units	$8\frac{1}{2}$		$8\frac{1}{2}$		

*Students offering German for admission will take Greek A, and those offering Greek for admission will take Greek 1 and 2.

Sophomore Year.

	First Semester.		Second Semester.		
	Course	Units	Course	Units	Page
Greek* : Plato (Apology and Crito), Homer (Odyssey), or Greek* : Second Year Greek	3* B*	1½ 1½	4* B*	1½ 1½	63 63
Latin : Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5 B*	1½ 1½	5, 6 B*	1½ 1½	65 61
German* : Elementary German, or German* : Composition, Conversation, Modern Prose	1* I	1½ 1	1* I	1½ 1	61 60
English : English and American Literature	I	I	I	I	60
Philosophy : Psychology, Introduction to Philosophy	I	I	2	I	72
Mathematics : Advanced Algebra, Plane Analytic Geometry	3, 4	1½	4	1½	82
Total Units		8		8	

Junior Year.

	First Semester.		Second Semester.		
	Course	Units	Course	Units	Page
Greek† : Xenophon (Hellenica), Lysias	1† 2	1½ 1	2† 2	1½ 1	63 60
English : Shakespeare					
German : Composition, Conversation, Modern Prose, or German : German Classics, or French : Elementary French	I 2 A	1½ 1½ 1½	I 2 A	1½ 1½ 1½	61 61 67
Economics : Principles of Economic Theory	I	I	I	I	74
Christian Evidences :	I	I			70
Philosophy : Logic	3	I			72
Philosophy : Ethics			5	I	72
Physics : Elements of Physics or Physics : General Physics (Mechanics, Sound, and Heat), and Physics† : Laboratory Physics	A I 2‡	2 1½ ½	A I 2‡	2 1½ ½	83 84 84
Electives :		1½		2½	
Total Units		7½-9		7½-9	

*Students offering German for admission will take Greek B and German 1, and those offering Greek for admission will take Greek 3 and 4 and German B, in the Sophomore Year.

†Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

‡ In some cases Physics 1 may be taken without Physics 2 (if approved by the Group Adviser and Instructor).

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
Greek*: Plato (Apology and Crito), Homer (Odyssey)	3*	1½	4*	1½	63
Philosophy: History of Philosophy	6	1½	6	1½	73
Philosophy: Theism			8	1	73
Electives:	4½-7½		3½-6½		
It is suggested that these be chosen from the following:					
Latin: Terence, Latin Literature, Roman Law	9, 10	1	10, 11	1	66
Greek: Demosthenes, Aristotle	8	1	9	1	64
Modern Language:	1 or 1½		1 or 1½		62-68
English: Public Speaking	4	1	4	1	61
History: English History, United States History	2	1½	3	1½	70, 71
History: The German Empire and its Present Organization, History of Civilization	4	1½	5	1½	71
Mathematics: Astronomy	9	1	9	1	83
Economics:		1		1	74-76
Education: History of Education, Pedagogy	1	1½	2	1½	73, 74
Education: School Organization and Method of Teaching	3	1			74
Comparative Philology:	1	½	1	½	68
Biology: Personal and Public Hygiene	9	½	9	½	79
Physics: Electricity and Light	3, 4	2	3, 4	2	84
Total Units		7½-9		7½-9	

*Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

GROUP II.—LATIN AND MODERN LANGUAGES.**Group Adviser:** Professor Grimm.

Entrance Requirements: English; Mathematics A, B; Latin A, B, C; German or French or Greek A; History, 1 unit; and $2\frac{1}{2}$ elective units.

This Group is recommended for its cultural value and is further well adapted to preparation for legal or literary pursuits and for teaching. The emphasis is laid on the Modern Languages, and provision is made for those who wish to make a special study of them.

This Group leads to the degree of **Bachelor of Arts**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the Course and its title, the page of this Bulletin where the course is described, and the number of units credit given for each semester's work. One unit signifies 2 hours of lecture or class work, or from 5 to 6 hours of laboratory work (or of laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	$1\frac{1}{2}$	2, 3	$1\frac{1}{2}$	65
German*: Composition, Conversation, Modern Prose	1*	$1\frac{1}{2}$	1*	$1\frac{1}{2}$	61
German*: Elementary German,	A*	$1\frac{1}{2}$	A*	$1\frac{1}{2}$	61
or French*: Elementary French,	A*	$1\frac{1}{2}$	A*	$1\frac{1}{2}$	67
or French: Grammar, Composition, Modern Prose	1*	$1\frac{1}{2}$	1*	$1\frac{1}{2}$	67
English: English Composition	A	1	A	1	60
History: Political History of Modern Europe	1	1	1	1	70
English Bible: General Introduction	1	$\frac{1}{2}$	1	$\frac{1}{2}$	69
Mathematics: Solid Geometry, Plane and Spherical Trigonometry	1, 2	$1\frac{1}{2}$	2	$1\frac{1}{2}$	82
Biology: General Biology, Zoölogy	1, 2	$1\frac{1}{2}$	2, 3	$1\frac{1}{2}$	77
or Chemistry: General Chemistry,	1	$1\frac{1}{2}$	1	$1\frac{1}{2}$	79
or Physics: Elements of Physics,	A	2	A	2	83
or Physics: General Physics (Mechanics, Sound, and Heat),	1	$1\frac{1}{2}$	1	$1\frac{1}{2}$	84
and Physics†: Laboratory Physics	2†	$\frac{1}{2}$	2†	$\frac{1}{2}$	84
Total Units	$8\frac{1}{2}$ or 9		$8\frac{1}{2}$ or 9		

*Students offering Greek for admission will take German A in Freshman Year (if electing German); those offering German for admission will take German 1 (or French).

†In some cases, if approved by the Instructor and the Group Adviser, Physics 1 may be taken without Physics 2.

GROUP TWO

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Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	1½	5, 6	1½	65, 66
German*: German Classics, or German: Composition, Conversation, Modern Prose	2*	1½	2*	1½	61
French: Grammar, Composition, Modern Prose,	1	1½	1	1½	61
or French: Elementary French	1	1½	1	1½	67
English: English and American Literature	A	1½	A	1½	67
Philosophy: Psychology, Introduction to Philosophy	1	1	1	1	60
Mathematics: Advanced Algebra, Plane Analytic Geometry	1	1	2	1	72
	3, 4	1½	4	1½	82
Total Units	8		8		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Epochs of German Literature,	4	1½	4	1½	62
or German: German Classics	2	1½	2	1½	61
French: French Classics,	2	1½	2	1½	67
or French: Grammar, Composition, Modern Prose	1	1½	1	1½	67
English: Shakespeare	2	1	2	1	60
English: Nineteenth Century Prose	3	1	3	1	60
Economics: Principles of Economic Theory	1	1	1	1	74
Christian Evidences:	1	1			70
Philosophy: Ethics			5	1	72
Electives:	½-2		½-2		
Total Units	7½-9		7½-9		

*Students offering Greek for admission will take German A in the Freshman Year, and students offering German for admission will take German 1.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
Modern Languages:					
Other Electives:					
Those looking toward teaching are advised to elect:					
Education: History of Education, Pedagogy	1	1½	2	1½	73, 74
Education: School Organization and Method of Teaching	3	1			74
Philosophy: Logic	3	1			72
Other electives will be recommended by the Group Adviser for those specializing in other lines.					
Total Units	7½-9		7½-9		

GROUP III.—HISTORY AND POLITICAL SCIENCE.

Group Adviser: Professor Wentz.

Entrance Requirements: English; Mathematics, A, B; Latin, A, B, C; German or French or Spanish or Greek A; History, 2 units; and $1\frac{1}{2}$ elective units.

In this Group emphasis is laid on the historical studies and on Political Science and Economics. The Group is intended to lay the foundations for professional legal studies and to prepare for the teaching of these subjects.

This Group leads to the degree of **Bachelor of Arts**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of units credit given for each semester's work. One unit signifies 2 hours of lecture or class work, or from 5 to 6 hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
Latin: Livy, Horace, (Odes), Cicero (De Senectute)	1, 2	$1\frac{1}{2}$	2, 3	$1\frac{1}{2}$	65
German*: Composition, Conversation, Modern Prose,	1*	$1\frac{1}{2}$	1*	$1\frac{1}{2}$	61
or German*: Elementary German,	A*	$1\frac{1}{2}$	A*	$1\frac{1}{2}$	61
or French: Elementary French	A	$1\frac{1}{2}$	A	$1\frac{1}{2}$	67
English: English Composition	A	1	A	1	60
History: Political History of Modern Europe	1	1	1	1	70
English Bible: General Introduction	1	$\frac{1}{2}$	1	$\frac{1}{2}$	69
Mathematics: Solid Geometry, Plane and Spherical Trigonometry	1, 2	$1\frac{1}{2}$	2	$1\frac{1}{2}$	82
Biology: General Biology, Zoölogy,	1, 2	$1\frac{1}{2}$	2, 3	$1\frac{1}{2}$	77
or Chemistry: General Chemistry,	1	$1\frac{1}{2}$	1	$1\frac{1}{2}$	80
or Physics: Elements of Physics,	A	2	A	2	83
or Physics: General Physics, (Mechanics, Sound, and Heat),	1	$1\frac{1}{2}$	1	$1\frac{1}{2}$	84
and Physics†: Laboratory Physics	2†	$\frac{1}{2}$	2†	$\frac{1}{2}$	84
Total Units	$8\frac{1}{2}$ or 9		$8\frac{1}{2}$ or 9		

*Students offering Greek for admission will take German A in the Freshman Year (if electing German); those offering German for admission will take German 1 (or French).

†In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
Latin: Cicero (De Amicitia or De Natura Decorum), Horace (Satires, and De Arte Poetica), Tacitus	4, 5	1½	5, 6	1½	65, 66
German: German Classics	2	1½	2	1½	61
or German: Composition, Conversation, Modern Prose,	1	1½	1	1½	61
or French: Grammar, Composition, Modern Prose,	1	1½	1	1½	67
or French: Elementary French	A	1½	A	1½	67
English: English and American Literature	1	1	1	1	60
Economics: Economic History of the United States, Commercial Law	6	1	7	1	75
English Bible: Biblical Literature	2	½	2	½	69
Philosophy: Psychology, Introduction to Philosophy	1	1	2	1	72
Mathematics: Advanced Algebra, Plane Analytic Geometry	3, 4	1½	4	1½	82
Total Units	8		8		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
English: Shakespeare	2	1	2	1	60
Economics: Principles of Economic Theory	1	1	1	1	74
Political Science: Theory of the State, American Government and Politics	1	1	2	1	76
Political Science*: International Law,	3*	1	3*	1	76
or Political Science*: American Constitutional History	4*	1	4*	1	76
History*: English History, United States History,	2*	1½	3*	1½	70, 71
or History*: The German Empire and its Present Organization, History of Civilization	4*	1½	5*	1½	71
Christian Evidences:	1	1			70
Philosophy: Ethics			5	1	72
Electives:	1-2½		1-2½		
Total Units	7½-9		7½-9		

*Political Science 3 alternates on successive years with Political Science 4 also History 2 and 3 alternate with History 4 and 5.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
English: Public Speaking	4	1	4	1	61
Economics: Economics of Business, Transportation	11	1	12	1	76
Political Science*: American Constitutional History,	4*	1	4*	1*	76
or Political Science*: International Law	3*	1	3*	1	76
History*: History of Civilization, The German Empire and its Present Organization,	4*	1½	5*	1½	71
or History*: English History, United States History	2*	1½	3*	1½	70, 71
Philosophy†: Sociology	4†	1			72
Electives:		2-3½		3-4½	
It is suggested that the electives in the Junior and Senior Years be taken from the following:					
Latin: Roman Law	11	1			66
Economics†: Money and Banking, Credit and Foreign Exchange		2†		3†	74, 75
Economics: Public Finance	5†	1	5†	1	75
Philosophy†: Sociology	4†	1			72
Philosophy: Advanced Logic	9	1			73
Modern Language:	1 or 1½		1 or 1½		62-68
Total Units		7½-9		7½-9	

*Political Science 3 alternates on successive years with Political Science 4; also History 2 and 3 alternate with History 4 and 5.

†Philosophy 4 is given on alternate years.

‡Economics 5 alternates on successive years with Economics 2 and 3.

GROUP IV.—CHEMISTRY AND PHYSICS.**Group Advisers:**

Chemistry Section: Professor Breidenbaugh.

Physics Section: Professor Parsons.

Entrance Requirements: English; Mathematics A, B; two languages from this list: Latin A, B, German, French, Spanish; Science not more than 2 units: and sufficient electives to make a total of 15 units.

In this Group the emphasis is laid on Chemistry and Physics with the requirement that special attention be given to one of these subjects in the Junior and Senior Years. The Group is intended to prepare for teaching these subjects, or for professional studies in these lines or for advanced work in research laboratories in the field of Chemistry and Physics (both scientific and technical), or for manufacturing and commercial pursuits.

Either the Chemistry or Physics section should be selected on entering the Group; however the choice between Chemistry and Physics as the principal subject is not required to be made until the beginning of the Junior Year.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of units credit given for each semester's work. One unit signifies 2 hours of lecture or class work, or from 5 to 6 hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Composition, Conversation, Modern Prose,	I	1½	I	1½	61
or German*: Elementary German	A*	1½	A*	1½	61
Latin: Livy, Horace (Odes), Cicero (De Senectute),	1, 2	1½	2, 3	1½	65
or French*: Grammar, Composition, Modern Prose,	1*	1½	1*	1½	67
or French*: Elementary French	A*	1½	A*	1½	67
English: English Composition	A	1	A	1	60
History: Political History of Modern Europe	I	1	I	1	70
English Bible: General Introduction	I	½	I	½	69
Mathematics: Solid Geometry, Plane and Spherical Trigonometry	1, 2	1½	2	1½	82
Chemistry: General Chemistry	I	1½	I	1½	79
Total Units	8½		8½		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: German Classics,	2	1½	2	1½	61
or German: Composition, Conversation, Modern Prose,	I	1½	I	1½	61
or French: French Classics	2*	1½	2*	1½	67
or French: Grammar, Composition, Modern Prose	1*	1½	I	1½	67
English: English and American Literature	I	1	I	1	60
Philosophy: Psychology, Introduction to Philosophy	I	1	2	1	72
Mathematics: Advanced Algebra, Plane Analytic Geometry	3, 4	1½	4	1½	82
Chemistry: Qualitative Analysis	2	1½	2	1½	80
Physics: General Physics, (Mechanics, Sound, and Heat)	I	1½	I	1½	84
Physics: Laboratory Physics	2	½	2	½	84
Total Units	8½		8½		

*Students offering German for admission will take German 1 in the Freshman Year; those offering Latin or French without German for admission will take German A. Those offering French for admission will take French 1 (if electing French) others electing French will take French A.

Junior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
English: Shakespeare	2	1	2	1	60
Economics: Principles of Economic Theory	1	1	1	1	74
Christian Evidences:	1	1			70
Philosophy: Ethics			5	1	72
Chemistry: Quantitative Analysis	3	1½	3	1½	80
Physics: General Physics, (Electricity and Magnetism, and Light)	3	1½	3	1½	84
Physics: Physical Measurements	4	½	4	½	84
Electives:		1-2½		1-2½	
Total Units	7½-9		7½-9		

Senior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Scientific German	3	1½	3	1½	62
Chemistry: Organic Chemistry	4	2	4	2	80
Chemistry: Special Quantitative Methods	7	1½-2½	7	1½-2½	81
Electives:		1½-4½		1½-4½	
Students intending to engage in Chemical work or in teaching Chemistry are advised to elect from the following list:					
Geology and Mineralogy: Dynamical and Historical Geology	1	1	2	1	81
Geology and Mineralogy: Mineralogy	3	1	3	1	81
French: Scientific French	3	1	3	1	67
German:		1 or 1½		1 or 1½	62
Spanish: Elementary Spanish	1	1½	1	1½	68
Total Units	7½-9		7½-9		

Junior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
English: Shakespeare	2	1	2	1	60
Economics: Principles of Economic Theory	1	1	1	1	74
Christian Evidences:	1	1			70
Philosophy: Ethics			5	1	72
Mathematics: Differential Equations,	5	1½	5	1½	82
or Chemistry:					
Quantitative Analysis	3	1½	3	1½	80
Physics: General Physics, (Electricity and Magnetism, and Light)	3	1½	3	1½	84
Physics: Physical Measurements	4	½-1	4	½-1	84
Electives:		1-2½		1-2½	
Total Units	7½-9		7½-9		

Senior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Scientific German	3	1½	3	1½	62
Physics: Physics Seminary	11	½	11	½	86
Physics: Electrical Measurements	6	1			85
Physics: Advanced Laboratory Physics	10	1	10*	½-I*	85
Physics: Mechanics,			5	1½	85
or Physics: Recent Advances in Physics,			7	1	85
or Engineering: Elements of Electrical Engineering			7	2	89
Electives:	3½-5½		3½-5½		
To those intending to pursue advanced work in Physics it is suggested that electives be chosen from the following:					
Modern Languages:	1 or 1½		1 or 1½		62-68
Mathematics: Differential Equations	6	1½	6	1½	83
Mathematics: Solid Analytic Geometry	7	1½	7	1½	83
Physics: Mathematical Physics	8 or 9	1	8 or 9	1	85
Mathematics: Astronomy	9	1	9	1	83
Geology and Mineralogy: Dynamical and Historical Geology	1	1	2	1	81
Biology: General Biology and Zoölogy	1, 2	1½	2, 3	1½	77
Total Units	7½-9		7½-9		

*Physics 10 may be omitted during the second semester if Engineering 7 is elected.

GROUP V.—BIOLOGY, CHEMISTRY, AND PHYSICS.**Group Adviser:** Professor Stahley.

Entrance Requirements: English; Mathematics A, B; two languages from this list: Latin A, B, German, French, Spanish; Science not more than 2 units; and sufficient electives to make a total of 15 units.

This Group offers advantages in supplying the essentials of a modern general culture course.

It provides the prospective teacher of general science with an adequate knowledge of the three fundamental sciences, and by adding certain studies, as electives in the Senior year, in the Department of Philosophy, the requirements of the Pennsylvania School Code are fully met.

As a Pre-Medical course, this Group satisfies the demands of the best medical schools and of the Pennsylvania State law for medical student registration. If the student wishes to limit his college preparation to two years provision is made to meet this desire.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of units credit given for each semester's work. One unit signifies 2 hours of lecture or class work, or from 5 to 6 hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German*: Composition, Conversation, Modern Prose,	1*	1½	1*	1½	61
or German*: Elementary German	A*	1½	A*	1½	61
or French*: Grammar, Composition, Modern Prose,	1*	1½	1*	1½	67
or French*: Elementary French,	A*	1½	A*	1½	67
or Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	1½	1, 2	1½	65
English: English Composition	A	1	A	1	60
History: Political History of Modern Europe	1	1	1	1	70
English Bible: General Introduction	1	½	1	½	69
Mathematics: Solid Geometry, Plane and Spherical Trigonometry	1, 2	1½	2	1½	82
Chemistry: General Chemistry	1	1½	1	1½	79
Total Units		8½		8½	

*Students offering German for admission will take German 1 in the Freshman Year; those offering Latin or French without German for admission will take German A. Those offering French for admission will take French 1 (if electing French); others electing French will take French A.

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: German Classics,	2	1½	2	1½	61
or German: Composition, Con-					
versation, Modern Prose,	1	1½	1	1½	61
or French: French Classics,	2	1½	2	1½	67
or French: Grammar, Composi-					
tion, Modern Prose,	1	1½	1	1½	67
or French: Elementary French	A	1½	A	1½	67
English: English and American					
Literature	1	1	1	1	60
Philosophy: Psychology, Intro-					
duction to Philosophy	1	1	2	1	72
Mathematics: Advanced Alge-					
bra, Plane and Analytic Ge-					
ometry	3, 4	1½	4	1½	82
Chemistry: Qualitative Analysis	2	1½	2	1½	80
Physics: General Physics, (Me-					
chanics, Sound, and Heat),	1	1½	1	1½	84
Physics: Laboratory Physics	2	½	2	½	84
Total Units		8½		8½	

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
English: Shakespeare	2	1	2	1	60
Economics: Principles of Eco-					
nomie Theory	1	1	1	1	74
Christian Evidences:	1	1			70
Philosophy: Ethics			5	1	72
Biology: General Biology, Zo-					
ölogy	1, 2	1½	2, 3	1½	77
Biology: Botany	7	1	7	1	78
Chemistry: Quantitative Analysis	3	1½	3	1½	80
Physics: General Physics (Elec-					
tricity and Magnetism, and					
Light)	3	1½	3	1½	84
Physics: Physical Measure-					
ments	4	½	4	½	84
Total Units		9		9	

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Scientific German	3	1½	3	1½	62
Biology: Human Anatomy and Physiology, Mammalian Histology, Embryology	4	1½	5, 6	1½	77, 78
Chemistry: Organic Chemistry	4	2	4	2	80
Electives:		2½-4		2½-4	
Those looking forward to teaching are advised to elect:					
Philosophy: Logic	3	1			72
Education: History of Education, Pedagogy	1	1½	2	1½	73, 74
Education: School Organization and Method of Teaching	3	1			74
Biology: Personal and Public Hygiene	9	½	9	½	79
Those looking forward to Medicine are advised to elect:					
Political Science: Theory of the State, American Government and Politics	1	1	2	1	76
French:		1		1	67
or German:		1		1	62
Biology: Personal and Public Hygiene	9	½	9	½	79
Geology: Dynamical and Historical Geology	1	1	2	1	81
Physics: Recent Advantages in Physics			7	1	85
In addition to the above lists, the following are suggested for general culture:					
History: English History, United States History,	2	1½	3	1½	70, 71
or History: History of Civilization, The German Empire and its Present Organization	4	1½	5	1½	71
Total Units		7½-9		7½-9	

GROUP VI.—COMMERCE AND FINANCE.**Group Adviser:** Professor Macdonald.

Entrance Requirements: English; Mathematics A, B; two languages (other than English) one of which must be French or German or Spanish; History 2 units; and sufficient electives to make a total of 15 units.

This Group is designed primarily for students who intend to enter business or the public service. Especial attention is given to the general principles underlying all lines of business, and to the relation of business to government and politics.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of units credit given for each semester's work. One unit signifies 2 hours of lecture or class work, or from 5 to 6 hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German* : Composition, Conversation, Modern Prose,	I*	1½	I*	1½	61
or German* : Elementary German	A*	1½	A	1½	61
French* : Grammar, Composition, Modern Prose,	I*	1½	I*	1½	67
or French* : Elementary French	A*	1½	A*	1½	67
English : English Composition	A	1	A	1	67
History : Political History of Modern Europe	I	1	I	1	70
English Bible : General Introduction	I	½	I	½	69
Mathematics : Solid Geometry, Plane and Spherical Trigonometry	1, 2	1½	2	1½	82
Biology : General Biology, Zoology,	1, 2	1½	2, 3	1½	77
or Chemistry : General Chemistry,	I	1½	I	1½	79
or Physics : General Physics, (Mechanics, Sound, and Heat),	I	1½	I	1½	84
and Physics† : Laboratory Physics	2†	½	2†	½	84
or Physics :	A	2	A	2	83
Total Units	8½ or 9		8½ or 9		

*Students offering Greek for admission will take German A in the Freshman Year (if electing German); those offering German for admission will take German 1 (or French).

†In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: German Classics,	2	1½	2	1½	61
or German: Composition, Con-					
versation, Modern Prose,	1	1½	1	1½	61
or French: French Classics,	2	1½	2	1½	67
or French: Grammar, Composi-					
tion, Modern Prose	1	1½	1	1½	67
English: English and American					
Literature	1	1	1	1	60
Philosophy: Psychology, Intro-					
duction to Philosophy	1	1	2	1	72
Economics: Economic History					
of the United States, Com-					
mercial Law	6	1	7	1	75
Economics: Accounting	8	1	8	1	75
Mathematics: Advanced Alge-					
bra, Plane Analytic Geome-					
try	3, 4	1½	4	1½	82
Electives:		½-2		½-2	
Total Units	7½-9		7½-9		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: German Classics,	2	1½	2	1½	61
or German: Epochs of German					
Literature,	4	1½	4	1½	62
or French: Scientific French,	3	1½	3	1½	67
or Spanish: Elementary Spanish	1	1½	1	1½	68
English: Shakespeare	2	1	2	1	60
English: Nineteenth Century					
Prose	3	1	3	1	60
History*: English History,					
United States History,	2*	1½	3*	1½	70, 71
or History*: The German Em-					
pire and its Present Organi-	4*	1½	5*	1½	71
zation, History of Civilization					
Economics: Principles of Eco-	1	1	1	1	74
nomics Theory					
Economics*: Money and Bank-	2*	1	3*	1	74, 75
ing,					
or Economics*: Public Finance	5*	1	5*	1	75
Christian Evidences:	1	1			70
Philosophy: Ethics			5	1	70
Total Units	8		8		

*Economics 5 alternates with Economics 2 and 3 on successive years. One is taken in the Junior, and the other in the Senior Year. History courses 4 and 5 also alternate on successive years with History 2 and 3.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
English: Public Speaking	4	1	4	1	61
Economics*: Public Finance, or Economics*: Money and Banking, Credit and Foreign Exchange	5*	1	5*	1	75
Economics: Elementary Statis- tics, Investment and Specu- lation	2*	1	3*	1	74, 75
Economics: Economics of Busi- ness, Transportation	9	1	10	1	75
Philosophy: Sociology	11	1	12	1	76
Political Science: Theory of the State, American Government and Politics	4	1			72
Electives:	1	1	2	1	76
It is suggested that electives be chosen from the following:		1½-3		2½-4	
German or French:		1½		1½	62-67
Spanish: Elementary Spanish,	1	1½	1	1½	68
or Spanish: Advanced Spanish	2	1	2	1	68
History*: The German Empire and its Present Organization, History of Civilization,	4*	1½	5*	1½	71
or History*: English History, United States History	2*	1½	3*	1½	70, 71
Political Science: International Law	3	1	3	1	76
Political Science: American Constitutional History	4	1	4	1	76
Geology: Dynamical and His- torical Geology	1	1	2	1	81
Biology: Botany,	7	1	7	1	78
or Biology: Sanitation and Bacteriology			8	1	78
Physics: General Physics, (Electricity and Magnetism, and Light)	3, 4	2	3, 4	2	84
Total Units		7½-9		7½-9	

*Economics 5 alternates with Economics 2 and 3 on successive years. One is taken in the Junior, and the other in the Senior Year. History courses 4 and 5 also alternate on successive years with History 2 and 3.

GROUP VII.—CIVIL ENGINEERING.**Group Adviser:** Professor Kirby.

Entrance Requirements: English; Mathematics A, B, D, and E; German; Latin A, or French or Spanish; Science, not more than 2 units; and sufficient electives to make a total of 15 units.

This Group affords suitable training not only for students who expect to enter this profession, but for those who wish to prepare themselves for callings more or less closely related to engineering. During the first two years emphasis is laid on the underlying natural sciences and on mathematics, while during the last two years technical subjects are introduced. Some liberal arts studies are required, and extreme specialization in instruction is avoided.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of units credit given for each semester's work. One unit signifies 2 hours of lecture or class work, or from 5 to 6 hours of laboratory work (or of laboratory work including lectures) per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Composition, Conversation, Modern Prose	I	1½	I	1½	61
English: English Composition, A	A	1	A	1	60
History: Political History of Modern Europe	I	1	I	1	70
English Bible: General Introduction	I	½	I	½	69
Mathematics: Spherical Trigonometry, Advanced Algebra, Plane and Solid Analytic Geometry	2, 3, 4	2	2, 4	2	82
Chemistry: General Chemistry	I	1½	I	1½	79
Physics: General Physics, (Mechanics, Sound, and Heat)	I	1½	I	1½	84
Physics: Laboratory Physics	2	½	2	½	84
Engineering: Mechanical Drawing	I	½	I	½	88
Total Units		10		10	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Scientific German	3	1½	3	1½	62
English: English and American Literature	1	1	1	1	60
Mathematics: Differential and Integral Calculus	5	2	5	2	82
Chemistry: Qualitative Analysis	2	1½			80
Physics: General Physics, (Electricity and Magnetism, and Light, and Dynamics)	3	1½	3	1½	84
Physics: Physical Measurements	4	½	4	1	84
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	1½	2	1	88
Engineering: Mechanics	3	1½	3	1½	88
Engineering: Metallurgy of Steel			4	½	89
Total Units	11		10		

Summer Field Surveying.

Civil Engineering 11.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. One unit (See page 89).

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
English: Shakespeare	2	1	2	1	60
Philosophy: Psychology	1	1			72
Mathematics: Astronomy	9	1			83
Geology and Mineralogy: Mineralogy	3	1			81
Physics: Electrical Measurements	6	1			85
Engineering: Hydraulics			5	1½	89
Engineering: Materials Testing	6	1			89
Engineering: Elements of Electrical Engineering			7	2	89
Civil Engineering: Mechanics (B)	18	1	18	1	91
Civil Engineering: Surveying (B), Office Work	12	1			90
Civil Engineering: Railroads (A)			16	2	90
Total Units	8		7½		

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. One unit. (See page 90).

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
Economics: Economic History of the United States, Commercial Law	6	1	7	1	75
Christian Evidences:	1	1			70
Philosophy: Ethics			5	1	72
Geology and Mineralogy: Dynamical Geology	1	1			81
Civil Engineering: Surveying (B), Office Work	14	1			90
Civil Engineering: Railroads (B)			17	1	90
Civil Engineering: Structural Design	19	1½	19	1½	91
Civil Engineering: Structural Drafting			20	1	91
Civil Engineering: Contracts and Specifications			21	½	91
Civil Engineering: Masonry	22	1½			91
Civil Engineering: Highways			23	1	92
Civil Engineering: Seminary	26	½	26	½	92
Total Units		7½		7½	

GROUP VIII.—MUNICIPAL (SANITARY) ENGINEERING.**Group Adviser:** Professör Kirby.

Entrance Requirements: English; Mathematics A, B, D, and E; German; Latin A, or French or Spanish; Science, not more than 2 units; and sufficient electives to make a total of 15 units.

This Group is offered for students who wish to fit themselves for dealing with the sanitary problems of the modern city, from the engineer's viewpoint. The course of study for the first three years is identical with that of Group VII.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of units credit given for each semester's work. One unit signifies 2 hours of lecture or class work, or from 5 to 6 hours of laboratory work (or of laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Composition, Conversation, Modern Prose	I	1½	I	1½	61
English: English Composition,	A	1	A	1	60
History: Political History of Modern Europe	I	1	I	1	70
English Bible: General Introduction	I	½	I	½	69
Mathematics: Spherical Trigonometry, Advanced Algebra, Plane and Solid Analytic Geometry	2, 3, 4	2	2, 4	2	82
Chemistry: General Chemistry	I	1½	I	1½	79
Physics: General Physics, (Mechanics, Sound, and Heat)	I	1½	I	1½	84
Physics: Laboratory Physics	2	½	2	½	84
Engineering: Mechanical Drawing	I	½	I	½	88
Total Units		10		10	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Scientific German	3	1½	3	1½	62
English: English and American Literature	1	1	1	1	60
Mathematics: Differential and Integral Calculus	5	2	5	2	82
Chemistry: Qualitative Analysis	2	1½			80
Physics: General Physics, (Electricity and Magnetism, and Light, and Dynamics)	3	1½	3	1½	84
Physics: Physical Measurements	4	½	4	1	84
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	1½	2	1	88
Engineering: Mechanics	3	1½	3	1½	88
Engineering: Metallurgy of Steel			4	½	89
Total Units	11		10		

Summer Field Surveying.

Civil Engineering 11.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. One unit. (See page 89).

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
English: Shakespeare	2	1	2	1	60
Philosophy: Psychology	1	1			72
Mathematics: Astronomy	9	1			83
Geology and Mineralogy: Mineralogy	3	1			81
Physics: Electrical Measurements	6	1			85
Engineering: Hydraulics			5	1½	89
Engineering: Materials Testing	6	1			89
Engineering: Elements of Electrical Engineering			7	2	89
Civil Engineering: Mechanics (B)	18	1	18	1	91
Civil Engineering: Surveying (B), Office Work	12	1			90
Civil Engineering: Railroads (A)			16	2	90
Total Units	8		7½		

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. One unit. (See page 90).

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
Economics: Economic History of the United States, Commercial Law	6	1	7	1	75
Christian Evidences:	1	1			70
Philosophy: Ethics			5	1	72
Geology and Mineralogy: Dynamical Geology	1	1			81
Biology: Sanitation and Bacteriology			8	1	78
Chemistry: Water and Sewage	5	1			80
Civil Engineering: Surveying (B), Office Work	14	1			90
Civil Engineering: Structural Design	19	1½			91
Civil Engineering: Contracts and Specifications			21	½	91
Civil Engineering: Masonry	22	1½			91
Civil Engineering: Highways			23	1	92
Civil Engineering: Water Supply Engineering			24	1	91
Civil Engineering: Sewerage			25	1	92
Civil Engineering: Seminary	26	½	26	½	92
Total Units		8½		7	

GROUP IX.—MECHANICAL ENGINEERING.**Group Adviser:** Professor Wing.

Entrance Requirements: English; Mathematics A, B, D, and E; German; Latin A, or French or Spanish; Science, not more than 2 units; and sufficient electives to make a total of 15 units.

This Group is designed for students who wish to prepare themselves for work along engineering and manufacturing lines. The Group combines the study of the basic principles of engineering and, to a limited extent, their application to practical problems, with some work in the liberal arts. The instruction is of a broad and fundamental nature, and will be found useful to students who are desirous of fitting themselves for future promotion to executive positions in manufacturing and industrial concerns.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of units credit given for each semester's work. One unit signifies 2 hours of lecture or class work, or from 5 to 6 hours of laboratory work (or of laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Composition, Conversation, Modern Prose	I	1½	I	1½	61
English: English Composition,	A	1	A	1	60
History: Political History of Modern Europe	I	1	I	1	70
English Bible: General Introduction	I	½	I	½	69
Mathematics: Advanced Algebra, Plane and Solid Analytic Geometry	3, 4	2	4	2	82
Chemistry: General Chemistry	I	1½	I	1½	79
Physics: General Physics, (Mechanics, Sound, and Heat)	I	1½	I	1½	84
Physics: Laboratory Physics	2	½	2	½	84
Engineering: Mechanical Drawing	I	½	I	½	83
Total Units		10		10	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Scientific German	3	1½	3	1½	62
English: English and American Literature	1	1	1	1	60
Mathematics: Differential and Integral Calculus	5	2	5	2	82
Chemistry: Qualitative Analysis	2	1½			80
Physics: General Physics, (Electricity and Magnetism, and Light, and Dynamics)	3	1½	3	1½	84
Physics: Physical Measurements	4	½	4	1	84
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	1½	2	1	88
Engineering: Mechanics	3	1½	3	1½	88
Engineering: Metallurgy of Steel			4	½	89
Total Units	11		10		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
English: Shakespeare	2	1	2	1	60
Philosophy: Psychology	1	1			72
Physics: Electrical Measurements	6	1			85
Engineering: Hydraulics			5	1½	89
Engineering: Materials Testing	6	1	6	1	89
Engineering: Elements of Electrical Engineering			7	2	89
Mechanical Engineering: Shop Work	31	1	32	1	92
Mechanical Engineering: Kinematics	33	2			92
Mechanical Engineering: Machine Design, (A)			34	1½	93
Mechanical Engineering: Heat Power Engineering, (A)	36	1½	36	1½	93
Total Units	8½		9½		

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
Economics: Economic History of the United States, Commercial Law	6	1	7	1	75
Christian Evidences:	1	1			70
Philosophy: Ethics			5	1	72
Mechanical Engineering: Machine Design, (B)	35	1½	35	1½	93
Mechanical Engineering: Heat Power Engineering, (B)	37	1	37	1	93
Mechanical Engineering: Power Plant Design			38	2	93
Mechanical Engineering: Mechanical Engineering Laboratory	39	½	39	½	94
Civil Engineering: Structural Design	19	1½			91
Civil Engineering: Surveying (C)	15	½			90
Mechanical Engineering: Seminary	40	½	40	½	94
Total Units		7½		7½	

GROUP X.—ELECTRICAL ENGINEERING.

Group Adviser: Professor Wing.

Entrance Requirements: English; Mathematics A, B, D, and E; German; Latin A, or French or Spanish; Science, not more than 2 units; and sufficient electives to make a total of 15 units.

This Group is designed for students who wish to specialize in the study of Applied Electricity. The course of study for this Group for the first three years is identical with that of Group IX. Ample opportunity is given for specialization in the Senior Year.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of units credit given for each semester's work. One unit signifies 2 hours of lecture or class work, or from 5 to 6 hours of laboratory work (or of laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Composition, Conversation, Modern Prose	I	1½	I	1½	61
English: English Composition,	A	1	A	1	60
History: Political History of Modern Europe	1	1	1	1	70
English Bible: General Introduction	1	½	1	½	69
Mathematics: Advanced Algebra, Plane and Solid Analytic Geometry	3, 4	2	4	2	82
Chemistry: General Chemistry	1	1½	1	1½	79
Physics: General Physics, (Mechanics, Sound, and Heat)	1	1½	1	1½	84
Physics: Laboratory Physics	2	½	2	½	84
Engineering: Mechanical Drawing	1	½	1	½	88
Total Units		10		10	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
German: Scientific German	3	1½	3	1½	62
English: English and American Literature	1	1	1	1	60
Mathematics: Differential and Integral Calculus	5	2	5	2	82
Chemistry: Qualitative Analysis	2	1½			80
Physics: General Physics, (Electricity and Magnetism, and Light, and Dynamics)	3	1½	3	1½	84
Physics: Physical Measurements	4	½	4	1	84
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	1½	2	1	88
Engineering: Mechanics	3	1½	3	1½	88
Engineering: Metallurgy of Steel			4	½	89
Total Units	11		10		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
English: Shakespeare	2	1	2	1	60
Philosophy: Psychology	1	1			72
Physics: Electrical Measurements	6	1			85
Engineering: Hydraulics			5	1½	89
Engineering: Materials Testing	6	1	6	1	89
Engineering: Elements of Electrical Engineering			7	2	89
Mechanical Engineering: Shop Work	31	1	32	1	92
Mechanical Engineering: Kinematics	33	2			92
Mechanical Engineering: Machine Design, (A)			34	1½	93
Mechanical Engineering: Heat Power Engineering, (A)	36	1½	36	1½	93
Total Units	8½		9½		

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Units Credit	Course Number	Units Credit	
Economics: Economic History of the United States, Commercial Law	6	1	7	1	75
Christian Evidences:	1	1			70
Philosophy: Ethics			5	1	72
Mechanical Engineering: Mechanical Engineering Laboratory	39	$\frac{1}{2}$	39	$\frac{1}{2}$	94
Electrical Engineering: Theory of Electrical Machinery	45	$1\frac{1}{2}$	45	$1\frac{1}{2}$	94
Electrical Engineering: Characteristics of Electrical Machinery	46	1	46	1	94
Electrical Engineering: Electrical Laboratory	47	$1\frac{1}{2}$	47	$1\frac{1}{2}$	94
Electrical Engineering: Generation of Electrical Energy	48	1			95
Electrical Engineering: Seminary	49	$\frac{1}{2}$	49	$\frac{1}{2}$	95
Total Units		$7\frac{1}{2}$		7	

COURSES OF INSTRUCTION

ENGLISH.

Professor Shipherd and Mr. Moser.

A. English Composition.—This course consists of practice in writing exposition, argument, description, and narration, in long and short themes, and in letters; with the parallel study of specimens, and of the principles of rhetoric as they apply to writing. Lectures, recitations, written exercises in the class-room and outside, and personal conferences.

Required course for all Freshmen. Two periods throughout the year. Two units.

1. English and American Literature.—This course consists of a survey of English Literature from "Beowulf" to Kipling, and of the chief American writers; lectures, collateral reading, and written reports.

Required course for all Sophomores. Two periods throughout the year. Two units.

2. Shakespeare.—The first semester, three plays read in class; the second semester, lectures on the poems and the rest of the plays, with collateral reading.

Required course for all Juniors. Two periods throughout the year. Two units.

3. Nineteenth Century Prose.—This course consists of (a) first third of the year, a study of the development of the modern critical essay—selected readings from Coleridge, Lamb, DeQuincey, Macaulay, Carlyle, Ruskin, Matthew Arnold, and others; (b) second third of the year, fiction—a study of the development and structure of the novel, with collateral reading and reports; (c) last third of the year, fiction—a study of the principles and structure of the short story, with selections from Hawthorne, Poe, Stevenson, Kipling, Bret Harte, Mark Twain, Aldrich, Ruth McEnery Stuart, Owen Wister, O. Henry, and others.

Required course for Juniors in Groups II and VI; open to all other Juniors as an elective course. Two periods throughout the year. Two units.

- 4. Public Speaking and Oral Reading.**—This course consists of practice in prepared and extempore speaking, in oral reading of prose and poetry, and in general platform work.

Elective course open to all qualified Juniors and Seniors. Two periods throughout the year. Two units.

GERMAN.

Professor Grimm and Mr. Roberts.

- German A.**—An elementary course. For students with no preliminary training in German, but with several years' work in other languages. It includes the study of grammar, practice in writing and speaking German, translation of prose and poetry, and the memorizing of simple poems.

Three periods throughout the year. Three units.

- German B.**—A course for beginners similar to German A, but especially designed for students in Group I. For such students it completes the requirements in German for the degree of Bachelor of Arts. Those, however, who have the ministry in view, are advised to take also German I or German 2.

Three periods throughout the year. Three units.

- German 1.**—For students who have presented German for admission; also for those who have completed German A. It may likewise be taken by students who have passed in German B. This course comprises a brief review of grammar, a careful study of syntax combined with oral and written prose composition, exercises in conversation, and readings, both with previous preparation and at sight, from standard writers of modern German prose. Some time is also given to the reciting of ballads and lyrics. Outside reading may be assigned.

Three periods throughout the year. Three units.

- German 2.**—For students who have passed in German I, also open to those students who have attained a grade of not less than C in German B. This course is devoted to the study of selections from classical authors, chiefly from Lessing, Goethe, and Schiller, with some attention to the laws and forms of poetics. Private reading is required.

Three periods throughout the year. Three units.

German 3.—For candidates for the degree of Bachelor of Science, also open to others who have completed German I. This course consists of the cursory reading in class of German essays of a general scientific character, together with private assignments on some special subject in Science.

Two or three periods throughout the year. Two or three units.

German 4.—For those students who have chosen German as their principal subject in Group II; open also to others who satisfy the instructor of their fitness to take it. The work in this course consists in the study of the main epochs of the German language and literature, on the basis of readings from representative poets and masters of German style.

Two or three periods throughout the year. Two or three units.

German 5.—An elective course on German literature in the period of the Reformation, with special reference to Luther and the church hymns. Open to advanced students in German.

Hours arranged to suit the convenience of instructor and students.

German 6.—An elective course devoted to the discussion of grammatical topics, advanced composition, and the critical reading of selected texts. Special attention is given to the needs of those students who wish to teach German in the public or secondary schools.

Hours arranged to suit the convenience of instructor and students.

German 7.—A course aiming to widen the student's vocabulary of modern German by means of extracts from newspapers, periodicals, and other suitable reading. It also presents to the student a general view of the German land and people. Attention is given to the needs of those looking forward to a business career. As far as practicable, the course will be conducted in German.

Hours to be arranged.

Deutscher Verein.—Opportunity for more extended German conversation and discussions referring to German life, literature, and culture may be offered to advanced students in a voluntary German Club, meeting fortnightly from November to April inclusive.

GREEK.

Professor Billheimer.

Preparatory Greek.

- A. First Year Greek.**—An elementary course for students who have not presented Greek for admission. The course will cover White's "First Greek Book," and Book I of Xenophon's "Anabasis."

Three periods throughout the year. Three units.

- B. Second Year Greek.**—A course for those who have taken Beginners' Greek. Books II-IV of Xenophon's "Anabasis" and selections from Xenophon's "Cyropaedia" will be read.

Three periods throughout the year. Three units.

College Greek.

- 1. Xenophon.**—Selections from Books I-IV of the "Hellenica," with a thorough review of forms and the essentials of grammar. Greek Prose Composition.

Freshman course. Three periods, first semester. One and one-half units.

- 2. Lysias.**—Selected Orations, special attention being given to syntax. Greek Prose Composition.

Freshman course. Three periods, second semester. One and one-half units.

- 3. Plato.**—"Apology," and "Crito." Interpretation of the text and advanced work in syntax.

Sophomore course. Three periods, first semester. One and one-half units.

- 4. Homer.**—Books IX-XIII of the "Odyssey." Attention will be given to the meter, to Ionic forms, and to the special features of syntax.

Sophomore course. Three periods, second semester. One and one-half units.

- 5. Euripides.**—This course will give a practical introduction to Greek metrics, and will include the history of Greek Tragedy and of the Greek Theatre. [To be given 1915-16].

Junior and Senior course. Two periods, first semester. One unit.

- 6. Aristotle.**—"The Athenian Constitution." In addition to the interpretation of the text, topics in Athenian constitutional history and political institutions will be assigned for report. [To be given 1915-16].

Junior and Senior course. Two periods, second semester. One unit.

- 7. Euripides in English Translation.**—In addition to the reading of the plays this course will involve a study of their subjects, plots, and divisions, and a scenic analysis of a number of plays by each member of the class. Open to all Juniors and Seniors.

Junior course. Two periods, second semester. One unit.

- 8. Demosthenes.**—"De Corona." The course includes a complete review of the public life of Demosthenes and of the relations between Athens and Philip of Macedon.

Junior and Senior course. Two periods, first semester. One unit.

- 9. New Testament Study.**—This course embraces a study of New Testament Greek. Some book of the New Testament chosen by the class is read in the original. The study of Biblical Greek has its approach from the classic side, but special attention is given to the distinctive peculiarities of Hellenistic Greek as a later and less artificial dialect of the elaborate and polished language of orators and philosophers. The student is familiarized with the vocabulary of the New Testament. Etymology and syntax are systematically studied.

Junior and Senior course. Two periods, second semester. One unit.

To provide for applicants for Group I who cannot offer the entrance requirements in Greek, but can offer three entrance units in Modern Languages, provision is made for beginning Greek in College. Such students have Preparatory Greek Courses A and B during Freshman and Sophomore years, and receive College credit. During Junior and Senior years they have Greek 1, 2, 3, 4.

A student who is a regular member of Group II will be allowed to elect courses in Greek, including Courses A and B, after the Sophomore year, and will be given College credit for them.

LATIN.

Professor Biklé.

Allen and Greenough's "Latin Grammar" and Harper's "Latin Lexicon" are recommended. Of the smaller dictionaries the stu-

dent is advised to get the "Elementary Latin Dictionary," by Charlton T. Lewis.

1. **Livy.**—Selections from Book I, and the Hannibalian War in Books XXI and XXII. Special attention is given the syntax and Livy's peculiarities of style. Collateral reading on the Punic Wars, and lectures on Rome and Carthage.

Freshman course. Three periods during the first semester up to the Christmas vacation. One unit.

2. **Horace.**—Selections from the "Odes," including a critical interpretation with special attention to the Horatian meters and the mythological and historical allusions of the text. Berens' "Hand-Book of Mythology" is recommended. Collateral reading on Horace as a lyric poet.

Freshman course. Three periods from the beginning of January to the last of March. One unit.

3. **Cicero.**—The "De Senectute" will be read, with thorough drill in syntax, special attention being given to the mode uses of the Latin Subjunctive.

Freshman course. Three periods from the last of March to the close of the academic year. One unit.

Note. During part of the Freshman year there will be, in connection with the reading of the Latin text, drill in Latin Prose Composition, embracing a rapid review of Latin syntax, with oral and written practice in the principles involved.

4. **Cicero.**—The "De Amicitia" or the "De Natura Deorum." Rigid drill in syntax will be continued, with training in reading the Latin text with expression. Collateral reading of the life and times of Cicero. Informal lectures on Cicero's philosophical views.

Sophomore course. Three periods a week during the first semester up to the Christmas vacation. One unit.

5. **Horace.**—"Satires," and the "De Arte Poetica." After the study of some selected satires the "Ars Poetica" is read, and each student is required to prepare a written analysis of the poem. There is a review of the dactylic hexameter versification.

Sophomore course. Three periods from the beginning of January to the last of March. One unit.

- 6. Tacitus.**—The "Agricola", or selections from the "Annals." Along with the translation of the text there will be a study of the times in relation to the literature of this period, and special attention will be given to the characteristics of the Silver Age Latinity.

Sophomore course. Three periods from the last of March to the close of the year. One unit.

- 7. Quintilian.**—Tenth Book of the "Institutes." The student is required to make a close study of the terms used by Quintilian in literary criticism, and to make a summary and classification of the Greek and Roman authors.

Junior course. Two periods during the first semester to the Christmas vacation. With course 8, two units.

- 8. Juvenal.**—Selected Satires. With full explanations of the text and collateral reading on the private and social life of the Romans of the Empire. Followed by a short course in Roman Antiquities.

Junior course. Two periods from the beginning of January to the close of the college year. With course 7, two units.

- 9. Terence or Plautus.**—The "Andria" of Terence or the "Captivi" of Plautus. The dramatis personae are assigned to special members of the class and the parts are rendered both in Latin and English. Informal lectures on the Roman theatre; also on the origin and development of the Latin drama, and the value of the Roman comedy to the philologist and the student of Roman life.

Senior course. Two periods for ten weeks. With courses 10 or 11, and 12 or 13, two units.

- 10. Latin Literature.**—A course of lectures embracing a general survey of the whole field, and aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, with special attention to the writers of the Golden and Silver Ages. Or, —

- 11. Roman History.**—A course of lectures covering the period from 150 B. C. to 100 A. D.

Senior course. Two periods for eight weeks. With courses 9 and 12, two units.

- 12. Roman Law.**—Morey's "Outlines" is the chief text-book. After a careful study of the historical development and content of Roman Law, a paper is required from each member of the class on a subject assigned for special investigation. Or, —

13. Roman Constitutional History.—The subject is pursued with the aid of a text-book.

Senior course. Two periods for seventeen weeks. With courses 9 and 10, or 11, two units.

FRENCH.

Professor Schappelle.

French A.—An elementary course for students who have not offered French for admission. For students in Group I, it satisfies the requirements in French for the baccalaureate degree.* This course includes careful drill in pronunciation, the study of the essentials of grammar with constant exercises in turning English into French, and the translation of easy French texts.

Three periods throughout the year. Three units.

French 1.—An intermediate course for students who have offered French for admission, also open to those who have passed in French A. This course comprises the study of grammatical principles, composition, exercises in pronunciation, dictation, and readings from standard writers of modern prose. Outside reading may be assigned.

Three periods throughout the year. Three units.

French 2.—Advanced Course. Open to all students who have completed with credit French 1, or who have done equivalent work. This course is devoted to the study of French classics, with special reference to Corneille, Racine, Molière. Some time is also given, during the second semester, to more difficult representative prose. Private reading is required.

Two or three periods throughout the year. Two or three units.

French 3*—Scientific French. This course consists of the reading of texts and magazine articles dealing with scientific subjects. Subjects for outside reading, dealing with branches of science in which the students expect to specialize, will be assigned.

Two periods throughout the year. Two units.

*Students who have the ministry in view may substitute German 1 or 2

ITALIAN.

Professor Schappelle.

Italian 1*.—Elementary course. Open to students who have completed the requirements in French. This course aims to give the student a thorough training in the rudiments of the Italian language and to enable him to read ordinary Italian with ease and accuracy.

Three periods throughout the year. Three units.

Italian 2*.—Advanced course. This course consists of a review of grammar together with readings from more difficult modern prose and poetic works.

Two periods throughout the year. Two units.

SPANISH.

Professor Schappelle.

Spanish 1.—Elementary course. Open to students who have completed the requirements in French. This course is intended for those who desire a knowledge of the essentials of the Spanish language, either for literary work or for a business career.

Three periods throughout the year. Three units.

Spanish 2.—Advanced course. This course consists of a review of grammar together with advanced composition. Selections from more difficult modern prose and poetic works, as well as from the classics, including Cervantes, will be read.

Two periods throughout the year. Two units.

COMPARATIVE PHILOLOGY.

Professor Grimm.

1. Linguistic Science.—A course open to advanced students, dealing with the principles of Linguistic Science.

One period throughout the year. One unit.

2. Sanskrit.—Beginners' course in Sanskrit. Open to advanced students. This course includes the study of grammar and the interpretation of an easy text from Lanman's Reader.

Two periods throughout the year. Two units.

*Omitted 1914-1915.

ENGLISH BIBLE.

Professor Wentz.

1. **General Introduction to the English Bible.**—This course aims to bring to the student a sympathetic knowledge of the life and thought of the Hebrews as the nation which has most vitally influenced our own religious thought. To do this reference must be made to Biblical history and geography. But the chief object is to acquaint the student with the Bible as the record of the advance and culmination of the highest religious consciousness of the human race. The distinctive forms of thought contained in the Bible from the beginnings of Hebrew history down to the close of the Apostolic Age are studied in succession. The original message of the writers is sought out and translated into the logic of the Occidental mind. This course is of necessity only introductory, but it is intended to show that a knowledge of Biblical thought and literature is an integral part of a liberal education.

Freshman course. One period throughout the year. One unit.

2. **Literary Study of the Bible.**—The Bible is studied as a body of English literature, and the sacred writings are subjected to a morphological analysis. The study of the literary forms is entirely independent of the historical investigation. The distinctive types of literary structure in the Bible as presented by Moulton in his "Modern Reader's Bible" are studied in detail and their permanent literary value is noted. The underlying principle of this study is that a thorough understanding of the outer literary form is an essential guide to an appreciation of the inner matter and spirit.

Sophomore course. One period throughout the year. One unit.

3. **Life of Christ.**—A survey is given of the political, religious, and social conditions in the time of Christ as the background necessary to an understanding of His life and teachings. The events of His life are then studied from the four-fold gospel itself, special attention being given to chronology and harmony. An outline of His teachings, ethical as well as religious, is adduced. The aim is not apologetic but purely historical.

Junior course. One period throughout the year. One unit.

4. **New Testament Study.**—See Greek 9.

CHRISTIAN EVIDENCES.

Professor Wentz.

1. A defensive statement of the Christian religion as the divinely revealed religion of redemption. From a consideration of the historical foundations the essence of Christianity is deduced in brief and thus the method of defense is determined. Evidences external and internal are considered. The miraculous element in the New Testament is vindicated. Special reference is made to those elements in our present intellectual environment which tend to make faith difficult. In conclusion, Christianity is compared with the ethnic religions, and the absolute character and the permanent significance of the Christian verities are maintained.

Junior course. Two periods, first semester. One unit.

HISTORY.

Professor Wentz.

1. **Political History of Modern Europe.**—The essential landmarks of ancient and mediaeval history are recalled and fixed definitely in mind, and a brief introductory survey is given of the civilization of Europe at the end of the Middle Ages. Then beginning with the Protestant Reformation the course of the historical development of modern Europe is traced by a thorough study of the Modern Period in connection with Schevill's "Political History of Modern Europe," the aim being to develop the general background of historical knowledge and to introduce the student to methods of college historical study.

Freshman course. Two periods throughout the year. Two units.

2. **English History.**—After a rapid introductory survey of the Anglo-Saxon period, the course begins with the Norman conquest and deals with the details of historical development down to the present time. Stress is laid upon such phases of English history as will specially aid the student to understand the modern political development in continental Europe and in the United States. The materials of the study include text-books, lectures, secondary authorities, and sources, with frequent discussions of assigned readings.

Junior and Senior course. Three periods, first semester. One and one-half units. Given in alternate years with Course 4. [Omitted 1914-1915].

Prerequisite, Course 1.

- 3. United States History.**—This course comprises a study in the epochs of our national history. An effort is made to discern the social and economic forces that have been operative in the development of the republic, and thus lead to an understanding of the national problems of the present. Much attention is given also to American biography, and biographical essays, sketches of epochal events, and frequent reports on assigned topics are required.

Junior and Senior course. Three periods, second semester. One and one-half units. Given in alternate years with Course 5. [Omitted 1914-1915.]

Prerequisite, Course 1.

- 4. The German Empire and its Present Organization.**—This study begins with the changes in the political map of Europe after the Congress of Vienna and traces the gradual nationalization and unification of Germany. It concludes with a detailed study of the present organization of the Empire and an examination of the political, religious, and economic conditions of the present day. The characteristic phenomena are constantly culled from the sources.

Junior and Senior course. Three periods, first semester. One and one-half units. Given in alternate years with Course 2.

Prerequisite, Course 1.

- 5. History of Civilization.**—This course, presupposing a knowledge of the facts and events of history, makes a study of the growth of historical ideas. The forces that have moved men and nations are sought out and the causes which have operated to direct the tendencies of peoples and to develop institutions are set forth. The unity and continuity of history are developed. The course leads first through the history of ancient and mediaeval civilization and then to the study of modern and contemporary civilization. The aim here is to analyze the constructive elements of our own civilization, to lead the student to a thorough understanding of the general trend of modern times, and thus enable him to determine his relation to the world society of to-day.

Junior and Senior course. Three periods, second semester. One and one-half units. Given in alternate years with Course 3.

Prerequisite, Course 1.

PHILOSOPHY.

Professor Sanders.

1. **Psychology.**—A course in general psychology which aims to acquaint the student with the phenomena of mind, the methods of psychological investigation, and the practical bearing of the various mental functions on the problems of ethics, pedagogy, etc.

Sophomore course. Two periods, first semester. One unit.

2. **Introduction to Philosophy.**—The course in general psychology suggests the problems of philosophy. The course in Introduction aims to acquaint the student with the content of philosophy, the origin and development of the various problems, the aim and method of philosophy, the results which have been attained, and its relation to the other departments of human thought.

Sophomore course. Two periods, second semester. One unit.

Prerequisite, Course 1.

3. **Logic.**—An introductory course in the laws of thought. The evolution of the concept, its development into judgment and inference, the systematic function of classification, the explanatory function of generalization, and the methodology of proof and investigation are studied with a view to securing a foundation for the theory of knowledge and effective scientific method.

Junior course. Two periods, first semester. One unit.

Prerequisite, Course 1.

4. **Sociology.**—A study of the nature of society and its problems. Starting with the psychological factors of sociation, the development of social institutions, the economic and cultural factors of social progress, and the elimination of hindrances, evils are taken up in turn with a view to an understanding of the methods of social improvement.

Junior and Senior course. Two periods, first semester. One unit.

Given in alternate years with Education 3.

Prerequisite, Course 1.

5. **Ethics.**—A study of human conduct. The concept of personality and the idea of self-realization, as forming the background of moral judgment, are wrought into a system which explains the origin of the moral motives as well as their implication of God and immortality.

Junior course. Two periods, second semester. One unit.

Prerequisite, Course 1, preferably also Courses 2 and 3.

6. History of Philosophy.

A. Ancient and Medieval Period.—This course traces the rise and progress of reflective thought as it appears among the Greeks and culminates in Scholasticism. Special stress is placed upon the Greek thinkers, with a view to acquiring an understanding of the spirit of philosophy.

Senior course. Three periods, first semester. One and one-half units.

Prerequisite, Courses 1, 2, and 3.

B. Modern Period.—This course covers the period from the Renaissance to the present time. Special stress is placed upon the great systems. The student is required to read selections from the great thinkers and report on them, the constant aim being to cultivate the philosophizing attitude, thus furnishing a basis for independent thought as well as an inspiration to do original thinking.

Senior course. Three periods, second semester. One and one-half units.

Prerequisite, Courses 1, 2, and 3, and 6 A.

7. Philosophy of Religion.—A study of religion as a distinct factor in human development. The aim of the course is to show the nature of religion and to interpret the various forms in which it manifests itself.

Senior course. Two periods, first semester. One unit.

Prerequisite, Courses 1, 2, and 3.

8. Metaphysics.—Beginning with the method of system building, the student is introduced to the meaning of a world-view, the factors which a comprehensive and consistent view must recognize, and the reasons for regarding Theism as the theory which best meets existing requirements.

Senior course. Two periods, second semester. One unit.

Prerequisite, Courses 1, 2, 3, 5, and 6.

9. Advanced Logic.—A study of epistemology investigating the principles of science with a view to understanding their origin, their validity, and their philosophical implications.

Senior course. Two periods, first semester. One unit.

Prerequisite, Courses 1, 2, and 3.

EDUCATION.

Professor Sanders.

1. History of Education.—A study of the most important movements in the history of education and of the factors and

personages instrumental in bringing about the various steps in the long line of progress.

Three periods, first semester. One and one-half units.

Prerequisite, Philosophy 1 and 2.

- 2. Pedagogy.**—A study of the principles of the educative process, the growth of the mind, and the laws governing its development.

Three periods, second semester. One and one-half units.

Prerequisite, Philosophy 1, 2, and 3, and Education 1.

- 3. School Organization and Method of Teaching.**—A study of the practical problems of organization and the application of principles.

Two periods, first semester. One unit. Given in alternate years with Philosophy 4.

Prerequisite, Philosophy 1, 2, and 3.

- 4. Secondary Education.**—A study of the principles and problems of the secondary school. The course is intended for those who are looking forward to High School and Superintendency positions.

Three periods, second semester. One and one-half units. Given in alternate years with Course 2.

Prerequisite, Courses, Philosophy 1, 2, and 3, and Education 1.

Note. The State School Code requires of all teachers who desire the State certificate courses 1, 3, and 4, in Philosophy, and at least three courses in Education.

ECONOMICS.

Professor Macdonald.

- 1. Economics.**—A study of the principles of economic theory, and their application to present day problems. Lectures, textbook, conferences, essays, and reports.

Junior course. Two periods throughout the year. Two units.

- 2. Money and Banking.**—An examination of theories of money and credit, with a study of the monetary history and banking systems of the United States, Great Britain, Canada, Germany, and France.

Junior and Senior course. Two periods, first semester. One unit.

- 3. Credit and Foreign Exchange.**—Credit and its place in the business world; international trade, foreign exchange, and the money market.

Junior and Senior course. Two periods, second semester. One unit.

Courses 2 and 3 are given in alternate years with Course 5.

- 4. Sociology.**—Given in the Department of Philosophy. (See Philosophy 4).

- 5. Public Finance.**—The principles of government revenue, expenditure, and debt; taxation and tax reform.

Junior and Senior course. Two periods throughout the year. Two units.

Given in alternate years with Courses 2 and 3.

- 6. Economic History of the United States.**—An outline history of the industrial, commercial, and financial development of the United States.

Sophomore course. Two periods, first semester. One unit.

- 7. Commercial Law.**—The fundamental principles of business law; contracts, partnerships, corporations, etc., from the standpoint of organization, rights, and liabilities.

Sophomore course. Two periods, second semester. One unit.

- 8. Accounting.**—The methods of accounting in various kinds of business, and for various types of organization. This course aims at a practical knowledge of bookkeeping.

Sophomore course. Three or four periods throughout the year. Three or four units.

- 9. Elementary Statistics.**—The elements of statistical method; the sources and collection of statistical data; analysis and interpretation of the material collected. Application will be made, as far as possible, to measurable factors in economic life, such as price, wages, and labor.

Senior course. Two periods, first semester. One unit.

- 10. Investment and Speculation.**—(A) The channels and forms of investment, and the analysis of investment securities. (B) The work of stock exchanges; the economic function of speculation; the ethics of such practices as manipulation, matched orders, and bucketing.

Senior course. Two periods, second semester. One unit.

- 11. Economics of Business.**—An introductory study of the fundamental principles underlying business. The topics discussed will include: types of business organization; profits and management; buying and selling; advertising and advertising mediums; gathering credit information; trade marks, copyrights, patents, trade names, and trade secrets.

Senior course. Two periods, first semester. One unit.

- 12. Transportation.**—The development and problems of railway and water transportation in the United States.

Senior course. Two periods, second semester. One unit.

POLITICAL SCIENCE.

Professor Macdonald.

- 1. Political Science.**—The origin and nature of the state, and the organization, province, and functions of government.

Junior and Senior course. Two periods, first semester. One unit.

- 2. American Government and Politics.**—A study of American government, federal and state; the evolution of political issues and the development of party machinery.

Junior and Senior course. Two periods, second semester. One unit.

- 3. International Law.**—Development of the rules of international law; the rights and obligations of nations in times of peace and war; arbitration.

Junior and Senior course. Two periods throughout the year. Two units.

Given in alternate years with Course 4.

- 4. American Constitutional History.**—The origin and growth of the federal system, the influence of the Supreme Court upon constitutional development, and the constitutional problems connected with territorial expansion and slavery.

Junior and Senior course. Two periods throughout the year. Two units.

Given in alternate years with Course 3.

- 5. Roman Law.**—Given in the Department of Latin. (See Latin II).

BIOLOGY AND HYGIENE.

Professor Stahley.

Courses 1 to 7 are required studies in Group V. Course 8 is required of students in Municipal Engineering. All the courses are open as electives to those qualified to take them. The special pre-medical courses are 1, 2, and 3, required by the Pennsylvania State law. They are also valuable for general culture and as a preparation for teaching in secondary schools.

The work in all courses is carried on by lectures, demonstrations, dissections, drawings, daily quizzes, and stated examinations.

- 1. General Biology.**—This course acquaints the student with microscopic technique and general laboratory methods, while he studies selected types of plants and animals, taken from the lower forms of life. The purpose is to ascertain fundamental facts of structure and life processes, with the significant relationships in the two great kingdoms of organic nature.

Junior course. Three periods for twelve weeks. Two hours of lectures, and six hours of laboratory work. One unit.

- 2. Vertebrate Zoölogy.**—The essential features of their variations, in the vertebrate type of animals, are carefully considered, while representative forms are being dissected, beginning with the highest class, the Mammalia, and passing down to the lowest Chordates. Questions relating to comparative morphology and physiology of Vertebrates are freely discussed.

Junior course. Three periods for fifteen weeks. Two hours of lectures, and six hours of laboratory work. One unit.

- 3. Invertebrate Zoölogy.**—Selected types of Invertebrates are dissected. The basic structural scheme which obtains in the various groups, their adaptations to environmental conditions, and their economic value, are among the subjects which claim attention. The bearing of the theory of evolution in animal development is discussed during the year.

Junior course. Three periods for eight weeks. Two hours of lectures, and six hours of laboratory work. One unit.

- 4. Human Anatomy and Physiology.**—Special attention is given to osteology, joints, ligaments, and muscles. Tramond's preparations, consisting of real bony joints, with accur-

ately placed artificial ligaments, and Azou's dissectible manikin, provide ample facilities for this part of the work. In this, as in all the branches of the course, physiological processes are constantly discussed.

Senior course. Three periods for seventeen weeks. Two hours of lectures, and six hours of laboratory work. One and one-half units.

Prerequisite, Courses 1, 2, and 3.

- 5. Mammalian Histology.**—With the aid of prepared microscopic slides, the pupil studies the minute anatomy of the different tissues of the body. He also learns practically how to fix, harden, imbed, section, stain, and mount the important tissues.

Senior course. Three periods for twelve weeks. Two hours of lectures and six hours of laboratory work. One unit.

Prerequisite, Courses 1, 2, and 3.

- 6. Embryology.**—The principles of the maturation and fertilization of the germ elements are considered. The development of the chick is studied. Entire mounts are made, as well as mounts of serial sections of the incubating egg, from the first hour of incubation to the fifth day, when the organs are practically all formed.

Senior course. Three periods a week for six weeks. Two hours of lectures, and six hours of laboratory work. One-half unit.

Prerequisite, Courses 1, 2, and 3.

- 7. Botany.**—This course includes a general survey of the entire plant kingdom in regard to structure, relationships in development, economic aspects, influence of environmental conditions, and other features of plant phenomena. The study includes recitations, practical laboratory work, and field excursions. Type forms of the four great series of plants are used to demonstrate modern botanical views. The course aims to be broadly fundamental.

Junior course. Two periods throughout the year. One hour recitation and three hours of laboratory work. Two units.

- 8. Sanitation and Bacteriology.**—This is a course in municipal sanitation. The lecture part of the work is comprised in Course No. 9, second semester. The bacteriology of water analysis is pursued in a well-equipped laboratory.

Senior year. Laboratory, six hours for first six weeks, second semester, one-half unit. Lectures, one hour for seventeen weeks, one-half unit.

- 9. Personal and Public Hygiene** (Sanitary Science).—During the first semester are discussed the questions of the waste and conservation of individual vitality in their application to efficient citizenship. During the second semester consideration is given to those essential principles of public hygiene which are necessary in protecting the health of communities.

Lectures, one hour weekly throughout the Senior year. One unit.

- 10. Physical Culture.**—This end is sought under medical guidance in the Gymnasium during the winter months. A physical examination of each student is made when he enters college, and such kinds of gymnastic exercises are prescribed as seem desirable. The purpose is to encourage the promotion of health and physical vigor as necessary for successful mental application. Since much harm is often done in injudicious physical exercise, special effort is made to advise those who are suffering from defective bodily conditions how they may be helped by hygienic methods and the selection of forms of exercise particularly suited to their needs.

Three hours weekly throughout the year. One unit.

CHEMISTRY.

Professors Breidenbaugh, and Stover, Mr. Dickson and Assistants.

The courses in chemistry are not designed to prepare specialists in any department of the subject, but to give a general training in the science. The successful completion of these courses will prepare the student to enter on graduate or professional studies in any leading university, or qualify him for a more successful pursuit of any technical business, or fit him to teach chemistry in secondary schools.

The instructors are in daily attendance during the college term from 8 to 12 and from 1 to 4, except on Saturday afternoons.

- 1. General Chemistry.**—No previous acquaintance with the subject is required. Those offering chemistry for admission will be allowed to substitute, as far as is best for the individual, from Course 2. The general principles and the fundamental laws of the science are included in the course, which consists of lectures, readings from approved text-books—such as Remsen's "College Chemistry," Newell's "Inorganic Chemistry for Colleges"—and laboratory work of which careful record in note-books is re-

quired. There are daily quizzes and frequent examinations. The last several weeks of the course are devoted to a practical review and examination in the determination of a certain number of substances, based on the results of previous study.

*Three lectures and six laboratory hours weekly for one year.
Three units.*

- 2. Qualitative Analysis.**—The student, following an outline prepared for the purpose, becomes acquainted with the general reactions of the elements of the several groups and from these data constructs the scheme of analysis which is applied in a number of determinations. There is constant supervision and personal conference over the work. Reference book, Fresenius' "Qualitative Analysis."

*Nine laboratory hours including class work weekly for one year.
Three units.*

Prerequisite, 1.

- 3. Quantitative Analysis.**—While such lectures as are desirable are given, this is essentially a personal laboratory course. An assigned minimum of work is required. Reference book, Fresenius' "Quantitative Analysis."

Nine hours of laboratory work weekly for one year. Three units.

Prerequisite, 1 and 2.

- 4. Organic Chemistry.**—Lectures and preparations based on Remsen's "Organic Chemistry" occupy about one-half the course; the remainder of the time is given to ultimate and proximate analysis of organic substances and of animal and plant products.

Three lectures and six laboratory hours weekly for one year. Four units.

Prerequisite, 1 and 2.

- 5. Water and Sewage.**—Lectures, reading, and laboratory work on the character of water supplies and sewage products and their purification.

Two periods for one semester arranged to suit the class. One unit.

Prerequisite, 1, 2, and 3.

- 6. Cements.**—Reading and laboratory work on the nature of cements.

Two periods for one semester, arranged to suit the class. One unit.

Prerequisite, 1, 2, and 3.

- 7. Special Quantitative Methods.**—Students who are qualified are offered courses in advanced and applied analysis—such as mineral and ore analysis, the examination of food stuffs, etc.

Such hours as may be arranged for during Senior year, or during Junior year by such students as have completed other work in the department. Three to five units.

- 8. Industrial Chemistry.**—A course of class-room exercises.

Three periods, second semester. Two units.

Prerequisite, 1, 2, and 3.

GEOLOGY AND MINERALOGY.

Professor Breidenbaugh.

- 1. Dynamical Geology.**—This course of lectures gives the student an acquaintance with the facts concerning inorganic geology, and a discussion of the dynamical agencies which have been operative in bringing the earth to the condition in which we now find it.

Two periods, first semester. One unit.

- 2. Historical Geology.**—A comprehensive discussion of the principles of evolution, with illustrations from historic geology.

The student is assigned readings from the text-books of Dana, Le Conte, Chamberlin and Salisbury, and other authors.

Field work and the preparation of papers from personal observation give practical application to the work. Frequent examinations are held.

Two periods, second semester. One unit.

- 3. Mineralogy.**—Following a short course of practical work in Crystallography, there is a series of determinations of not less than one hundred minerals by their physical and blowpipe characteristics.

Two periods throughout the year. Two units.

Prerequisite, Chemistry 1.

MATHEMATICS AND ASTRONOMY.

Professor Nixon and Mr. Troxell.

The courses in mathematics are arranged to give thorough mental discipline; to meet the needs of teachers; to fill the wants of students desiring later to do graduate work in the best univer-

sities; to prepare for engineering or other technical courses. The instruction includes full explanation of all difficult points, free use of blackboard by both instructor and pupil, daily drill and notebook work, checking of results, application of mathematics to practical problems of every day life.

1. **Solid Geometry.**—The usual text demonstrations; including the relations of planes and lines in space, the properties and mensuration of prisms, pyramids, cylinders, and cones, the sphere and spherical triangle; geometric models. Wentworth and Smith's "Solid Geometry."

Freshman course. Three periods one-third of year. One unit.

2. **Plane and Spherical Trigonometry.**—Fundamental definitions, properties and analytical theory of trigonometric functions with the usual formulae; theory and principles of logarithms; applications to the solution of various practical problems. Granville's "Plane and Spherical Trigonometry."

Freshman course. Three periods two-thirds of year. Two units.

3. **Advanced Algebra.**—Undetermined coefficients with applications to series and partial fractions; graphical method of solving equations; determinants with applications to simple equations; the elements of the theory of equations; including the solution of numerical equations by Horner's method. Wells' "Advanced Algebra."

Sophomore course. Groups I-VI, three periods one-third of year. One unit. Groups VII-X, four periods one-third of year. One unit.

4. **Plane Analytic Geometry or Elementary Analysis.**—The equation and the plotting of the corresponding locus is discussed in general, after which the following topics are studied: line, circle, ellipse, hyperbola, parabola, and other curves, their tangents, normals, lengths, and areas. Solid Analytical Geometry, Nicholas' "Analytic Geometry"; Granville's "Elementary Analysis."

Sophomore course. Groups I-VI, three periods two-thirds of year. Two units. Groups VII-X, four periods two-thirds of year. Three units.

5. **Differential and Integral Calculus.**—The latest and best methods of teaching the Calculus are used. This course prepares students for work in applied science, for more advanced courses in pure mathematics, and for engineering or other technical courses. Simple practical problems are

given throughout that illustrate the theory and at the same time are of interest to the student. These problems do not presuppose an extended knowledge in any branch of science, but are based on knowledge that all students in a first course in the Calculus are supposed to have in common. Granville's "Differential and Integral Calculus."

Junior course. Groups I-VI, three periods throughout the year. Three units. Groups VII-X, four periods throughout the year. Four units.

6. Differential Equations.—This course is based on the Calculus of Junior year, and consists of recitations on methods of solution and geometrical interpretation of ordinary and partial differential equations. Cohen's "Differential Equations."

7. Solid Analytic Geometry.—This course is based upon the Analytic Geometry of Sophomore year, and includes various topics of Analytic Geometry of three dimensions. C. Smith's "Solid Geometry."

8. Theoretical Mechanics.—This course is based upon the Calculus of Junior year, and includes the mathematical treatment of various topics in mechanics. Smith and Longley's "Theoretical Mechanics."

6, 7, and 8, Senior courses. Three periods throughout the year. Three units.

9. General Astronomy.—This course is designed to meet the needs of students interested in Astronomy. Practical work is included, but the emphasis is laid upon the theory. The subject matter is the following: determination of time, latitude, and longitude from observation with the transit; computing the time of sunrise, etc., and projecting a lunar eclipse; descriptive Astronomy covering the material contained in Young's "General Astronomy."

Senior course. Two periods throughout the year. Two units.

PHYSICS.

Professor Parsons, Mr. Creager, and Assistants.

A. Elements of Physics.—A course covering in an elementary way the general subject of Physics, largely descriptive, and requiring no previous knowledge of the subject. The instruction is given by lectures illustrated by experiment,

recitations, problems, and laboratory work. This course is designed for those who can devote no more than one year to Physics, and not for those who will pursue the subject further.

Three lectures and three laboratory hours per week throughout the year. Four units. (In some cases the course may be elected without the laboratory work).

- 1. General Physics.**—Mechanics of solids and fluids, properties of matter and heat. The first part of a course in General Physics extending through two years, required of all students in the Scientific and Engineering Groups, and forming the basis of the more specialized courses. The instruction is given by lectures illustrated by experiments, recitations, and problems assigned for work outside of the class. Kimball's "College Physics" (or some text of equal rank) is used, supplemented by considerable additional material. No previous knowledge of the subject is assumed, but a high school course is advantageous as preparation.

Three hours per week throughout the year. Three units.

- 2. General Laboratory Physics.**—A laboratory course in mechanics of solids and fluids, properties of matter and heat, designed to accompany Course 1. (Excepting in special cases the two courses must be taken together). In heat, some experiments on steam and other heat engines, and the heat of solution and chemical reactions, are included. It is desirable, though not required, that the student should have had an elementary laboratory course in Physics.

Three or six hours per week throughout the year. One or two units.

- 3. General Physics.**—Sound, electricity and magnetism, and light. A continuation of Course 1, emphasizing particularly electricity and magnetism, and including the fundamentals of photography. Lectures, recitations, and problems.

Three hours per week throughout the year. Three units.

Prerequisite, Physics 1 and Mathematics 3, 4.

- 4. Physical Measurements.**—Laboratory experiments in sound, electricity and magnetism, and light. A continuation of Course 2 and designed to accompany Course 3. Some ex-

periments in electrical measurements, diffraction and polarization of light, and photography, are included.

Three to six hours per week throughout the year. One to two units.

- 5. Mechanics.**—A lecture course, based on the calculus, treating of statics, dynamics of translation and rotation, moments of inertia, elasticity, and vibrations, and accompanied by laboratory work in these subjects.

Two lecture hours and three laboratory hours per week, second semester. One and one-half units.

Prerequisite, Physics 1, 3, Mathematics 5.

- 5a. Mechanics.**—Part of Course 5 as described above is given to engineering students in connection with Courses 3 and 4.

One lecture and one laboratory period (3 hours) per week, second semester. No separate credit for 5a alone.

- 6. Electrical Measurements.**—A lecture and text-book course in the theory of electricity and magnetism, electrical measurements and measuring instruments, accompanied by laboratory work.

One hour lecture and class work, and three or six laboratory hours, first semester. One or one and one-half units.

Prerequisite, Physics 1-4, Mathematics 5.

- 7. Recent Advances in Physics.**—Radioactivity, discharge of electricity through gases, the electron theory, and other topics. Lectures illustrated by experiments.

Two lectures per week, second semester. One unit.

Prerequisite, Physics 1 and 3, and Mathematics 5.

- 8, 9. Mathematical Physics.**—Lecture course in mathematical Physics for graduate students (or other advanced students). The two courses alternate in successive years, forming together a complete course, but the topics treated may vary from year to year. Such subjects as mechanics, hydrodynamics, the kinetic theory of gases, the theory of sound, electricity and magnetism, physical optics, and the electro-magnetic theory, are treated.

Two or three lectures per week throughout the year.

Prerequisite, Physics 1-4, and Mathematics 5, 6.

- 10. Advanced Laboratory Physics.**—This comprises all the advanced laboratory work not included in the preceding courses, and is designed for graduate students and others

specializing in Physics. The experiments or problems assigned are variable and may include research on some assigned topic.

The course may be taken through more than one year, credit being given proportional to the work done.

11. Physics Seminary.—A meeting, for one hour a week throughout the year, of the advanced students, at which papers on assigned topics are presented, current topics are discussed, and reports given of recent work of investigators (obtained from reading the journals).

One unit.

LECTURESHIP ON CONSTITUTIONAL LAW.

Henry Wolf Bickl , Esquire.

Four lectures on the Constitution of the United States; including (a) a discussion of the American Doctrine of Constitutional Law, and (b) a consideration of the commerce clause, (c) of the clause forbidding the impairment by the States of the obligation of contracts, and (d) of the guaranties of personal liberty and equality contained in the Fourteenth Amendment.

LECTURESHIP IN SOCIOLOGY.

Mrs. Mary G. Stuckenberg has founded a Lectureship in Sociology in honor of her late husband, J. H. W. Stuckenberg, D.D., LL.D., by the terms of which the College will have annually a lecture on some phase of Sociology from the standpoint of Christian Ethics by specialists in this important field. The lecture is given at such a time as is convenient to the lecturer chosen for the year.

ENGINEERING COURSES

Full courses are offered in

Civil Engineering,	Mechanical Engineering,
Municipal Engineering,	Electrical Engineering.

All engineering students pursue the same subjects for the first two years. At the end of that time it is believed that most men will be able to make an intelligent choice between Civil and Municipal Engineering on the one hand, and between Mechanical and Electrical Engineering on the other. At the end of the third year a civil engineering student decides further between the general Civil Engineering course (Group VII) and the Municipal Engineering course (Group VIII). At the same point in his studies a mechanical engineering student decides between the course in Mechanical Engineering (Group IX) and that in Electrical Engineering (Group X).

Civil Engineering is an increasingly comprehensive term. Beside municipal engineering it includes among other subdivisions, topographic, railroad, and structural engineering. The Municipal (Sanitary) Engineering course is offered for those who wish to specialize somewhat in subjects relating more particularly to the problems of sanitation and civic betterment with which the engineering department of a modern city is concerned. The field for the mechanical engineer also has broadened of late, resulting in its subdivisions into branches of activity which call for technical knowledge in special fields. No attempt has been made in the following courses to meet these special demands, as it is the aim of the department to graduate men well grounded in the fundamentals and sufficiently broad in training to fill positions of some responsibility in any part of the field. Students interested in mechanical engineering are advised to follow Group IX unless especially interested in applied electricity; in that case they are recommended to the course in Electrical Engineering, Group X.

Engineering graduates not infrequently find employment in positions in which some knowledge of a branch of engineering other than that for which they have been trained is necessary or valuable. The engineering instruction is on this account designed to be broad and fundamental, and subjects which tend toward extreme specialization are not offered.

An increasing proportion of graduates in engineering engage

in callings more or less closely related to engineering, such as manufacturing, contracting, or commercial lines. In view of this there have been included in the engineering courses such subjects as will lay the foundations of a broad scientific education.

The following seven technical subjects underlie all engineering training, and are required of all students in Groups VII, VIII, IX and X.

- 1. Elementary Mechanical Drawing.**—Use of instruments, orthographic, isometric and cabinet projections, simple sections, intersections and developments, lettering, sketching, tracing and blueprinting. Text-book, French's "Engineering Drawing."

Three hours throughout the year. One unit.

Note. The College provides drawing desks, boards, etc., but each student furnishes his own drawing outfit, costing about fifteen dollars. Students are urged to avoid the purchase of cheap instruments which soon become worthless. Engineering students use their drawing instruments throughout their course and for years afterward. The purchase of an outfit of good grade is therefore economy.

- 2. Descriptive Geometry and Advanced Mechanical Drawing.**—The first semester's work comprises descriptive geometry, problems relating to the point, line, and plane in space, followed by a thorough drill in sections, intersections, and developments, with applications to engineering and architectural problems. The instruction is designed to develop in the student the power of concise reasoning.

During the second semester the work is a continuation of Course 1 and covers shop drawings, working drawings, lettering, conventional signs, perspective, etc. Text-books, Tracy and North's "Descriptive Geometry," French's "Engineering Drawing."

Two hours of recitation and four hours of drawing weekly, first semester; six hours of drawing weekly; second semester. Two and one-half units.

Prerequisite, Course 1.

- 3. Mechanics (A). Statics and Dynamics.**—Forces in equilibrium, simple structures, translation and rotation, work, energy, power. Text-book, Maurer's "Technical Mechanics."

Three recitations weekly throughout the year. Three units.

Prerequisite, Physics 1 and 2, Mathematics 3 and 4.

4. **Metallurgy of Steel.**—A lecture course on the metallurgy of iron and steel. Ores and their preparation, blast furnace operation, manufacture of steel by open hearth, Bessemer, crucible and cementation processes, re-manufacture into commercial shapes.

One lecture weekly, second semester. One-half unit.

Prerequisite, Chemistry 1.

5. **Hydraulics.**—A study of the mechanics of water at rest and in motion, with applications to a variety of problems relating to the pressure of water and to its flow in natural and artificial channels, pipes, etc. Text-book, Hoskin's "Hydraulics."

Three recitations weekly, second semester. One and one-half units.

Prerequisite, Engineering 3 and Mathematics 5.

6. **Materials Testing.**—Recitation and laboratory course in the study of the properties of engineering materials. In the first semester the standard tests of cement, mortar, and sand are made and compared, supplemented by lectures on cement manufacture. The common tensile, compressive, and transverse tests on steel, timbers, and concrete are made and discussed. The solution of practical problems is emphasized. The first semester's work is required of all engineering students. During the second semester the remaining common materials are tested, and the change in the properties of iron and steel due to heat treatment is taken up. The work of this semester is required only of students in Groups IX and X. Text-book, Boyd's "Strength of Materials."

One recitation and three laboratory hours weekly throughout the year. Two units.

Prerequisite, Engineering 3 and 4, and Mathematics 5.

7. **Elements of Electrical Engineering.**—The application of the fundamentals of electricity and magnetism to electrical engineering practice. Theory, structure, and operation of electrical machinery. Recitation work supplemented by simple laboratory experiments. Text-book, Timbie's "Elements of Electricity."

Three recitations and three laboratory hours weekly, second semester. Two units.

Prerequisite, Physics 3 and 4, and Engineering 3.

CIVIL AND MUNICIPAL ENGINEERING.

Professor Kirby and Mr. ———.

- 11, 12. **Surveying (A).**—The field work is done during a period of three weeks immediately preceding the beginning of the

Junior year.* It consists in drill in the use of the more common surveying instruments, supplemented by recitations held at frequent intervals and designed to coördinate the instruction. The remainder of the course consists of calculations and mapping done during term time. The calculations include those necessary in the ordinary office work of a land surveyor, while the mapping comprises plotting the notes of the survey made during the summer, tracing and blueprinting the map, and additional drill in plain lettering. Text-book, Tracy's "Plane Surveying."

Three weeks (1½ hours) in August and September, and six hours of computation and drawing first semester. Two units in all.

Prerequisite, Course 2.

- 13, 14. Surveying (B).**—The field work is done during a period of three weeks immediately preceding the beginning of Senior year.* Topographic surveying, using a variety of methods and instruments, including the plane table. A short railroad survey and location. Adjustments of instruments. The office work, done in term time, includes instruction in topographic drafting and the use of topographic maps, also the treatment of various subjects in higher surveying. Text-books, Tracy's "Plane Surveying," Breed and Hosmer's "Higher Surveying."

Three weeks (1½ hours) in August and September, and six hours of drawing, first semester. Two units in all.

Prerequisite, Course 11, 12.

- 15. Surveying (C).**—Required of students in Group IX; open to non-engineering students. A brief course in which a small survey is made, levels are taken, a map and a profile are plotted, some computing is done, etc.

Three hours of field work and drawing, weekly, first semester. One-half unit.

- 16. Railroads (A).**—A course in the mathematics of railroad curves, — simple, compound, and vertical; including switches and spirals. Earthwork calculation and the construction of mass diagrams. Text-book, Allen's "Railroad Curves and Earthwork."

Four recitations weekly, second semester. Two units.

Prerequisite, Course 11, 12.

- 17. Railroads (B).**—The necessary preliminary surveys are made during the preceding summer field work (Course 13).

*The Summer Course in 1915 begins at 8 A. M. on Tuesday, Aug. 24th.

Course 17 includes making the plans, calculations, etc., involved in the preparation of a full report on the proposed construction, including its cost. Economics of railroad construction.

Six hours of drawing and computation weekly, second semester. One unit.

- 18. Mechanics (B).**—Stresses in framed structures, principally roof trusses and bridges of various types. Graphical and analytical methods of solution are employed. Text-book, Malcolm's "Graphic Statics."

Six hours of drawing weekly throughout the year. Two units. Prerequisite, Course 3.

- 19. Structural Design.**—A course in the strength of materials as applied to the design of structures of steel and of wood. Beginning with simple joists under specific loadings, the student finally makes all the calculations necessary in the complete design of a number of bridges and roof trusses of various types. The stability of existing structures is also investigated. This is essentially a course in the mathematics of design and does not include drafting.

Nine hours of computation weekly throughout the year. Three units.

- 20. Structural Drafting.**—The making of detailed drawings for the component parts of a steel structure. Conformity with the best practice is required in the notation, and the drawings are carefully checked.

Six hours of drawing weekly, second semester. One unit.

- 21. Contracts and Specifications.**—The elements of contract law as applied to the mutual relations of engineer, contractor, and owner. Critical review of typical specifications and practice in specification writing. Text-book, Kirby's "Elements of Specification Writing."

One recitation weekly, second semester. One-half unit.

- 22. Masonry.**—Design and construction of stone and concrete structures, heavy foundations, arches, walls, and dams. Instruction is in part by recitation, but includes drafting-room work in the design of several typical structures. Text-book, Baker's "Masonry Construction."

Two recitations and three hours of drawing weekly, first semester. One and one-half units.

- 23. Highways.**—Recitations on the design, construction, and maintenance of roads and pavements, with especial consideration of the exigencies of present-day traffic.

Two recitations weekly, second semester. One unit.

- 24. Water Supply Engineering.**—The quantity and quality of water from various sources. Works for the collection and storage of water, for its purification and for its distribution. Text-book, Turneure and Russell's "Public Water Supplies."

Two recitations weekly, second semester. One unit.

- 25. Sewerage.**—Various types of design and construction are discussed in recitation. Plans for a small sewer system are made by each student. Modern methods for the purification and disposal of sewage and garbage. Visits are made to plants under construction and in use. Text-books, Kinnicutt, Winslow, and Pratt's "Sewage Disposal," Ogden's "Sewer Design," Ogden's "Sewer Construction."

Two recitations weekly, second semester. One unit.

- 26. Civil Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly throughout the year. One unit.

(Open only to Seniors in Groups VII and VIII).

MECHANICAL ENGINEERING.

Professor Wing and Mr. ———

- 31. Shop Work (A).**—Simple exercises in the formation of green sand moulds, supplemented by lectures on modern foundry practice. Bench and lathe work in wood, elements of pattern making.

Six laboratory hours weekly, first semester. One unit.

- 32. Shop Work (B).**—Forge practice in iron and steel. Shaping, hardening, and tempering of tools. Machine and bench work in metals. Lectures on modern shop practice.

Six laboratory hours weekly, second semester. One unit.

- 33. Kinematics.**—Theory of mechanisms, instant centers, cams, gears, linkages, velocity and acceleration diagrams, etc. Recitation work supplemented by the solution of practical problems in the drawing room. Text-book, Barr and Wood's "Kinematics of Machinery."

Two recitations and six hours of drawing weekly, first semester.

Two units.

Prerequisite, Course 2.

- 34. Machine Design. (A).**—An elementary course showing the application of the fundamentals of mechanics and kinematics to machine design. Selection of mechanisms for specified work, analysis of energy and force problems in machines, and proportioning of detailed parts from theoretical and practical considerations. Text-book, Kimball and Barr's "Elements of Machine Design."

Three recitations weekly, second semester. One and one-half units.

Prerequisite, Course 6 (1st semester), 4, and 33.

- 35. Machine Design (B).**—Application of principles of Course 34 to the design of two typical machines, including all necessary computations; working drawings of most important parts, and a finished assembly drawing. Text-book, Kimball and Barr's "Elements of Machine Design."

One recitation and six hours of drawing weekly throughout the year. Three units.

Prerequisite, Course 34.

- 36. Heat Power Engineering (A).**—Thermodynamics of gases and vapors, theoretical gas cycles, application of theory to problems of commercial heat engines, engine performances and efficiencies. Text-book, Hirshfeld and Barnard's "Elements of Heat Power Engineering."

Three recitations weekly throughout the year. Three units.

Prerequisite, Mathematics 5, and Physics 1 and 2.

- 37. Heat Power Engineering (B).**—A continuation of Course 36. Fuels, combustion boilers, gas engines, steam engines and turbines, power house auxiliaries, etc. Efficiency and economy of operation. Selection and combination of elements for power houses. This study covers the theory necessary for Course 38. Text-books, Hirshfeld and Barnard's "Elements of Heat Power Engineering," and Gebhardt's "Steam Power Plant Engineering."

Two recitations weekly throughout the year. Two units.

Prerequisite, Course 36.

- 38. Power Plant Design.**—Design of a typical power plant, selection and arrangement of main units and auxiliaries. An outline drawing is made showing the location and arrangement of boilers, turbines, condensers, pumps, etc., the provision for coal and ash handling, and storage. Economic features of power house design emphasized. Reference book, Gebhardt's "Steam Power Plant Engineering."

Twelve hours of drawing weekly, second semester. Two units.

May be taken only in conjunction with Course 37.

- 39. Mechanical Engineering Laboratory.**—Calibration of common engineering measuring instruments, such as steam gauges, thermometers, indicator springs; determinations of quality of steam; measurements of power; efficiency tests of boilers, gas engines, pumps, etc. Computation periods.

Three laboratory hours weekly throughout the year. One unit.
Prerequisite, Course 36.

- 40. Mechanical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly throughout the year. One unit.
(Open only to Seniors in Group IX).

ELECTRICAL ENGINEERING.

Professor Wing and Mr. ———.

- 45. Theory of Electrical Machinery.**—Fundamentals of the electric and magnetic circuit; representation of alternating currents and voltages by vectors and complex quantities; study of the alternating current circuit; theory of transmission lines; transformers, alternators, synchronous and induction motors, direct current machines, etc. Text-books, Franklin and Esty's "Elements of Electrical Engineering," Vol. II, and Gray's "Electrical Machine Design."

Three recitations weekly throughout the year. Three units.
Prerequisite, Course 7.

- 46. Characteristics of Electrical Machinery.**—This course supplements the work of Course 45. Problems in alternating current circuits. Outline design and predetermination of performance characteristics of transmission lines, transformers, alternators, alternating current motors and direct current generators and motors. Practice is given in the use of standard hand books. Reference book, Gray's "Electrical Machine Design."

Two computing periods of three hours weekly throughout the year.
Two units.

May be taken only in conjunction with Course 45.

- 47. Electrical Engineering Laboratory.**—Elementary and advanced experimental work in electrical engineering: the study of polyphase alternating current circuits, shape of A. C. waves, determination of the magnetic properties of steel and iron; commercial testing of alternators, trans-

formers, synchronous motors, induction motors, D. C. machines, etc. Text-book, Karapetoff's "Experimental Electrical Engineering."

Six laboratory hours and one report weekly throughout the year. Three units.

Prerequisite, Course 7.

- 48. Generation of Electrical Energy.**—Selection and arrangement of equipment, both electrical and mechanical, for a modern central station; problems of power generation and distribution. Special attention is paid to the economic questions involved.

Two lectures weekly, first semester. One unit.

Prerequisite, Course 7.

- 49. Electrical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly throughout the year. One unit.

(Open only to Seniors in Group X).

Trips of Inspection.

Several short tours are arranged during the course for the inspection of engineering structures, power plants, shops, manufacturing establishments, etc., in the vicinity. Reports of such visits are prepared by each student from his individual notes.

Engineering Library.

A departmental library and reading room of reference books, periodicals, and technical reports is being built up in connection with the College Library. Students have access to the following publications:

"Engineering News," "Engineering Record," "Municipal Engineering," "Engineering Magazine," "Machinery," "American Machinist," "Power," "Electrical World," "General Electric Review," "Electric Journal," and the regular reports of the following societies: American Society of Mechanical Engineers, Connecticut Society of Civil Engineers, Ohio Engineering Society, Indiana Engineering Society, Michigan Engineering Society, Illinois Society of Engineers and Surveyors, Iowa Engineering Society, Engineering Association of the South.

Engineering Equipment.

For a detailed description of the equipment in engineering see page 114.

GENERAL INFORMATION

The College aims to develop the greatest possible individuality and the highest manhood of the student. The prevailing influences are such as tend to lead young men to an active Christian life and to a full realization of their personal responsibilities. The immediate supervision of the students is in the hands of the President and Dean with the Class Advisers.

CLASS ADVISERS.

A professor is appointed as Adviser for each class. The members of the class present any request to the Faculty through their Class Adviser and confer with him on personal and college matters.

STUDENT GROUP ADVISERS.

The head of each Department acts as the adviser of all the students having a major in his Department. He is known as the Group Adviser. He exercises oversight in the student's selection of electives and in the general character of his work. The Group Advisers are as follows: Group I, Professor Biklé; Group II, Professor Grimm; Group III, Professor Wentz; Group IV, Professors Breidenbaugh and Parsons; Group V, Professor Stahley; Group VI, Professor Macdonald; Groups VII and VIII, Professor Kirby; Groups IX and X, Professor Wing.

STUDENT COUNCIL.

Without lessening its authority and responsibility, the Faculty has delegated certain duties in government to the student body as an exercise in self-government. The students act through a Student Council of four Seniors,

three Juniors, two Sophomores, and one Freshman, elected by their respective classes. The Council acts in certain matters of discipline, and in matters concerning the general welfare of the student body and is a medium of communication between the students and the Faculty. Hazing in any form is forbidden.

TERMS AND VACATIONS.

The college year of 35 weeks is divided into two semesters. The first semester begins at 11 A. M. on the third Wednesday in September and continues, with recesses at Thanksgiving and Christmas, to the first Saturday of February; the second semester begins when the first semester ends and continues, with an Easter recess, to Commencement Day, the second Wednesday of June. The closing days of each semester are devoted to examinations.

ATTENDANCE.

Each student not residing with his parents is required to attend on week days a prayer service at 12 M., in Brua Chapel. On the Lord's Day attendance is required at the morning service in the College Church. Those affiliated with other denominations than the Lutheran are, on request of their parents, granted permission to attend elsewhere. Ten per cent absences are allowed from prayers and church under the rules governing absences from class work.

Each student is allowed individually ten (10) per cent absences from class-room work in each subject. This allowance is expected to cover all ordinary absences. Fractions are not counted, and absences may not exceed four in any subject during a single semester. These absences are not allowed for the two days preceding nor for the two days following any recess. Absences are not allowed for announced examinations. Such absences can be excused only by action of the Faculty; and the substi-

tute examination will be held at such time as the instructor shall appoint. When absent from topical examinations or quizzes the student shall have an examination or quiz at such time as the instructor shall appoint. Unexcused absences count as zero on grade, and if these absences exceed the ten per cent allowance the student shall take such special examination as the instructor shall direct. A further allowance of absences may be granted to members of athletic teams, musical organizations, participants in literary contests, and to representatives of literary societies for the purpose of attending conventions.

ELECTIVES.

A student having electives must deposit with the Registrar, within the first two days of the year, a written list of his electives, bearing the endorsement of the student's Group Adviser and of the instructors concerned. After the first week of the year changes in electives can be made only when approved by the Faculty, under such conditions as may be determined in each case. No regular student may drop an elective subject without faculty permission; failure to secure such permission will be regarded as a deficiency in the subject.

EXAMINATIONS.

Examinations are held in all subjects at the close of each semester or when, during the term, a subject is completed. Instructors may hold topical or quiz examinations at the time of any of the regular appointments with the class. Absences from these examinations are governed by the rules given above.

CONDITIONS AND DEFICIENCIES.

Freshman entrance conditions must be satisfied by the beginning of the Sophomore year.

A student whose grade in any course is reported as de-

ficient at the close of a semester must present himself for re-examination at the beginning of the next semester; failing in this examination he must repeat the semester's work in that course.

Re-examinations for removing deficiencies are regularly held on the Tuesday preceding the opening of the first semester, and on the second and third Saturday afternoons of the second semester. No such examinations are held at any other time, except in the case of Senior finals.

A student who at the beginning of any college year continues deficient in more than one-third of a year's work will be enrolled with the class in which the deficiency occurs. The student will not be advanced in enrollment with his class until the deficiency has been removed.

A student deficient at the beginning of a year in courses aggregating six units will be required to drop a corresponding number of units in the regular work of the year.

RECORDS.

A record of scholarship and deportment, under the care of the Registrar, is kept for each student. The grades of scholarship are designated as follows: A (excellent), B (good), C (fair), D (poor, barely passed), E (failed, but entitled to another examination), F (failed utterly and must repeat with the next class), and Inc. (incomplete).

The student begins each semester with a deportment grade of 100. Deductions are made from this at the end of each semester. Unexcused absences count: from church 5, from prayers 2, from recitation 2, from gymnasium 2.

REPORT.

A report from the above record is sent to the parents or guardian of each student at the end of each semester.

About the middle of each semester notice is given to the student and to his parents or guardian if his work is of low grade or if he has an excessive number of absences.

REQUIREMENTS FOR GRADUATION.

Each student completing the prescribed work of any group of studies and in addition enough electives to aggregate at least sixty-four units, will receive the degree pertaining to that group, either Bachelor of Arts or Bachelor of Science; provided, however, that no student in any year shall maintain less than fifteen units per week.

No student will be graduated who is not present at Commencement, unless he be excused by the Faculty.

CERTIFICATES.

Partial and Special Course students, as well as those who withdraw before completion of a full course of study, are entitled to a certificate giving a copy of the college record.

MASTER'S DEGREE.

The degrees of Master of Arts and Master of Science are conferred, on those having the corresponding Bachelor's degree from approved colleges, according to the following regulations:

1. The Master's degree is conferred upon graduate students on the completion of at least one year of resident work. Such students must present to the Faculty Committee on Advanced Degrees, for approval, a plan of advanced studies involving the equivalent of at least twelve units per week. It is recommended that at least one-half of the course be devoted to some one subject.

2. The Master's degree is also conferred on non-resident graduates of this College of three or more years' standing. These must, however, at the beginning of their candidacy arrange with the Faculty Committee on Advanced Degrees (see page 13) a systematic course of

study, and must report annually to the head of the department in which the subjects have been chosen.

In either case the candidate must pass examinations satisfactory to his instructors and to the committee. Previous to the final examinations the instructors in charge shall file with the committee a statement of the work done by the candidate. If the report is satisfactory the candidate will be permitted to present himself for final examination. He shall also be required to prepare a thesis upon an approved subject bearing on his principal study. This thesis must be completed and submitted to the committee at least one month prior to the Commencement on which the degree is to be conferred, and if accepted, it becomes the property of the College.

Graduates of this College who have devoted at least one year to graduate work in residence at other colleges or universities and have fulfilled the above requirements may be admitted by the Faculty to the Master's degree. It may also be conferred upon college graduates who have completed courses of advanced study in professional schools, provided that the work done be in kind, grade, and amount equivalent to that required of other candidates for the same degree and that it has not been offered to satisfy the requirements for a professional degree.

HONORS.

The following honors will be awarded at the close of each year:

A. Final Honors will be awarded to members of the graduating class meeting the following conditions:

General Final Highest Honors will be awarded to those students who have maintained throughout their four years the grade of A in all of their studies.

General Final Honors will be awarded to those students who have maintained the grade A in at least half of the units of their four college years and have not fallen below the grade B in their other studies.

Students entering at the beginning of the Sophomore

year will be awarded the same honors if for three years they meet the above requirements as to grade.

B. Department Final Honors. If the head of any department recommends a student taking a major in that department as having shown special excellence in that work, the student shall be awarded Final Honors in that department provided he does not have a grade below B in more than three courses in other departments.

C. Class Honors for Freshman, Sophomore, Junior, and Senior Years. Highest Honors for the designated year will be awarded to those members of these classes who have maintained the grade A in all of their studies throughout the year.

Class Honors for any particular year will be awarded to those members of the class who have maintained the grade A in at least half of the units of the year and do not have a grade below B in any of their studies for the year.

These awards are announced at Commencement and published in the next BULLETIN.

PRIZES.

Muhlenburg Freshman Prize. The interest of a fund of five hundred dollars, contributed by F. A. Muhlenberg, D.D., LL.D., a former professor in this College, is given at the close of each year to that member of the Freshman Class who is found to have attained the highest grade of scholarship in Group I.

Baum Mathematical Prize. Charles Baum, M.D., Ph.D., Class of 1874, of Philadelphia, has contributed five hundred dollars, the income from which is to be given annually to that member of the Sophomore Class who shows the greatest proficiency in Mathematics.

Hassler Latin Prize. Mr. Charles W. Hassler furnished a fund, the interest of which is annually expended for the purchase of a Gold Medal, to be presented to that student of the Junior Class, who, at the end of the year, shall be rated as the best Latin scholar.

Reddig Oratorical Prize. From the estate of Mr. Clar-

ence Jacob Reddig, Class of 1877, of Shippensburg, there is annually contributed the sum of twenty-five dollars as an Oratorical Prize, to be contended for in public by the Junior Class, on Monday of Commencement Week.

Pittsburgh Prize in Chemistry. The Pittsburgh-Gettysburg Club has established a prize of twenty-five dollars to be given to the student who does the best work in Chemistry during the Junior year in Group IV.

Graeff Prize. This prize was founded by Mr. John E. Graeff, Class of 1843. The sum of thirty dollars is awarded for the best English Essay from a member of the Senior Class, on a subject previously assigned. The decision is made by a committee appointed by the Professor of English.

Prizes in Debate. The Literary Societies of the College provide three prizes of \$36, \$24, and \$15, respectively, for the encouragement of skill in debating. The first contest takes place about the middle of November between teams chosen by the Sophomore and Freshman Classes, respectively, and the winning team is rewarded with \$15. The second contest between the winning team and a team from the Junior Class, takes place about the middle of March, and the team that wins this contest receives \$24. The third contest, between the second victors and a team from the Senior Class, takes place about the middle of May, and the winners of this contest receive \$36. Winners of the prize of \$36 are excluded from further competition.

Social Problems in Christianity Prize. A friend gives annually twenty-five Dollars in prizes to be contested for by members of the Senior Class in a contest on the general subject of the Applications of Christianity to Social Problems. The particular topic is assigned or approved by the Professor of Philosophy. The orations shall be submitted to judges for grading; and the writers of the six receiving the highest grades shall deliver them at a public contest on or about the last Thursday in March, at which time another set of judges shall grade

the delivery. The prizes, fifteen dollars and ten dollars respectively, are awarded on the basis of the average grades.

Elinore Taylor Brewer Greek Prize. The Class of 1883 has contributed the sum of five hundred dollars, the income from which is annually awarded as a prize to that member of the Sophomore Class who has done the best work in the regular Sophomore Greek course.

No student shall be eligible to any honor or prize unless he has had at our own College all the work required of all students in all groups for the year or years for which the honor or prize is awarded; and (unless substitutions have been approved at the time by special Faculty action) he must have had also all the work required in his group for the year or years for which the honor or prize is awarded.

SCHOLARSHIPS AND AID FOR STUDENTS.

Endowed scholarships worth \$30 each, and a limited number of scholarships worth \$50 each, are awarded annually to deserving students by the Finance Committee of the Board of Trustees. All applications for these scholarships must be made in writing and must state in full the reasons for the request. Such applications must be handed to the President before October 1st of the college year.

An endowment fund of \$5,000 for the aid of worthy and needy students has been established by Mr. C. H. Boyer as a memorial to his father, Rev. Matthew G. Boyer, D.D., '65, for over eighteen years a most faithful and efficient member of the Board of Trustees of the College. The income from this fund is divided into ten scholarships of \$25 each, awarded annually. Applications for this aid must be in writing addressed to Mr. C. H. Boyer, 29 La Salle St., Chicago, Ill., or to the President, before October 1st of the college year.

The Parent Education Society of the General Synod controls ten scholarships, worth \$30 each, which are open to young men preparing for the ministry in the Lutheran Church. Applications for the use of these scholarships should be made to the Chairman of the Scholarship Committee, J. A. Singmaster, D.D., Gettysburg, Pa.

Mrs. Theresa King Saltzman, of Harrisburg, Pa., has established an endowment fund of \$1,000, the income from which is awarded annually as a scholarship to some worthy and needy student. Applications for this aid must be made in writing and must be handed to the President before October 1st of the college year.

A number of other \$30 scholarships have been endowed and are controlled by congregations, synods, and individuals. The Gettysburg School Board controls such a scholarship established by C. W. Thompson, Esq., of Lebanon, Pa. The authorizations from those controlling these scholarships must be handed to the President before October 1st of the college year.

A considerable number of students earn part of their college fees by caring for halls and class rooms and by doing other work about the campus and buildings. Twenty-five cents an hour is allowed for these services. All applicants for such employment must hand a written request for it to the President before October 1st of the college year.

Upperclassmen are employed as proctors and caretakers of the various college buildings and as assistants in the laboratories. One is employed to have charge of the Reading Room. These appointments are made by the Faculty; and applications for such positions must be made in writing and must be in the hands of the President before May 1st of the preceding college year.

There are many opportunities in the town of Gettysburg for students to earn money. Rev. S. F. Snyder, Assistant to the President, will be glad to assist those who desire such outside employment. Many students skilled

in the use of musical instruments earn money by playing at various functions in the town and in the College. Some of the students are granted allowances by the Athletic Council for work and supervision in the Gymnasium and on the Athletic Field. A number of students earn their board by managing student eating clubs, of which there are a large number, or by waiting on the table. Others earn money by acting as newspaper correspondents.

The children of clergymen are allowed a reduction of one-half of the tuition and general fees.

TREASURER'S BILLS.

The bills of the College Treasurer are made out for each semester and include half of each item for the college year. A discount of 5 per cent is allowed on all dues paid within six weeks of the opening of each semester.

No student will be graduated or receive honorable dismissal until all financial obligations to the College and for class publications and other student interests are settled, except when a student has registered a timely protest with the Faculty and the claim for relief has been allowed.

COLLEGE FEES.

A Registration Fee of \$5 is required on entering College and is payable to the Registrar.

The annual charge for Tuition and General Fees is \$100.

In any course pursued for a Master's degree the charge for Tuition and General Fees is \$100, when all the instruction has been given by members of the College Faculty. Of this \$25 is considered as a Registration Fee and is payable in advance, the balance being due one month previous to the date set for the conferring of the degree. When the Master's degree is taken *in absentia* the total fee is \$25 payable in advance.

The Reading Room Fee is \$1.50.

The annual Gymnasium and Athletic Fee is \$8. This gives the student free admission to all intercollegiate games in Gettysburg.

ANNUAL LABORATORY FEES.

Based on three laboratory periods per week these are:

Biological Laboratory	\$14.00
Chemical Laboratory	18.00
Physical Laboratory	12.00
Mineralogy for the course	3.00

In addition to the Chemical Laboratory Fee a charge is made for apparatus broken or not returned in good condition. In the Physical Laboratory an additional charge is made for material used and any damage done to apparatus.

ANNUAL ENGINEERING FEES.

Junior year	\$15.00
Senior year	15.00
Summer Course in Surveying	10.00

ESTIMATED COST OF A YEAR IN COLLEGE.

The expenses of a college student depend largely on the training and habits of the individual. To aid the student rooming in a College dormitory to calculate the probable cost of a year in college at Gettysburg the following estimates are submitted:

(A). ITEMS ON COLLEGE BILL.

	Low.	Moderate.	Liberal
Tuition and General Fees ..	\$100.00	\$100.00	\$100.00
Reading Room Fee.....	1.50	1.50	1.50
Room rent and heat (half room)	10.00	25.00	40.00

Gymnasium and Athletic fee	8.00	8.00	8.00
Electric light (half room) ..	2.10	2.10	4.20
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	\$121.60	\$136.60	\$153.70

Five per cent. discount for prompt payment	6.08	6.83	7.70
	<hr/>	<hr/>	<hr/>

Payable to Treasurer	\$115.52	\$129.77	\$146.00
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(B). OTHER EXPENSES.

Board for 35 weeks	\$105.00	\$122.50	\$140.00
Laundry	15.00	18.00	20.00
Books and stationery.....	15.00	18.00	20.00
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Est'd cost for college year	\$250.52	\$288.27	\$326.00
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BOARDING.

The College does not maintain a dining hall. The students receive excellent board in clubs and with private families at a cost of from \$3 to \$4 per week.

To the above should be added laboratory or engineering fees in case the student takes courses involving such charges.

COLLEGE DORMITORY ROOMS.

The following rules govern the assignment of dormitory rooms in Pennsylvania Hall, Cottage, and South College Hall:

All rooms shall be declared vacant May 1st of each year. Students desiring to remain in the rooms that they have been occupying shall have that right provided they make written application to the Registrar, on blanks provided by him for that purpose, during the first week in May. During the second week of May all rooms not reserved in this manner shall be assigned to the members of the several classes in the following order: Juniors, Sophomores, Freshmen. The order of choice in any particular class shall be determined by a drawing for lots conducted by the Registrar and the President of the Student Council. Any rooms not taken are then available

for new students entering the following September, and will be assigned by the Registrar in the order in which the applications for them (in person or in writing) are received.

Prospective students are advised to apply for rooms as early as possible. The Registrar will assign rooms by correspondence if he is informed, at least approximately, of the kind of accommodations desired and whether or not a room-mate is wanted. As a rule rooming arrangements made in this way are entirely satisfactory, but if it should so happen that the assigned room does not suit or the room-mates are not congenial, there is usually no difficulty in making a rearrangement satisfactory to all concerned.

The charge for room rent, including steam heat, is given below for each room in the above-mentioned dormitories, and covers the period commencing one week before College opens in September and ending one week after College closes in June, with the exception of the Christmas and Easter vacations. The occupants of a room pay equal parts of the rental. Not more than two students are allowed to occupy one room or suite except in the case of some of the larger suites. In Pennsylvania Hall the designations are E for east division, M for middle division, and W for west division. S indicates South College Hall. C indicates Cottage Hall.

\$18.00: 255, 256, C.

\$20.00: 106, 108, W; 120, 122, E; 357, 358, 360, C.

\$22.00: 105, 107, W; 119, 121, 123, E.

\$25.00: 353, 354, 362, C.

\$26.50: 103, W; 125 E.

\$27.50: 101, W; 127, E.

\$30.00: 340, S.

\$35.00: 111, 117, 118, M; 140, S; 361-363, C.

\$37.50: 104, W.

\$42.00: 206, 208, 306, 308, 406, 408, W; 210, 410, M; 220, 222, 224, 320, 322, 324, 420, 422, 424, E.

\$44.00: 205, 207, 305, 307, 405, 407, W; 219, 221, 223,

319, 321, 323, 419, 421, 423, E; 333, 334, 335, 336, 343, 344, 345, 346 S.

\$45.00: 153, 359, C.

\$48.00: 240, S.

\$49.50: 337, 338, 341, 342, S.

\$55.00: 204, 304, 404, W; 211, 217, M; 226, 326, 426, E; 331, 332, 347, 348, S.

\$57.00: 202, 203, 302, 303, 402, 403, W; 225, 228, 325, 328, 425, 428, E.

\$60.00: 201, 301, 401, W; 227, 327, 427, E; 157, 158, C.

\$62.00: 257, 258, C.

\$65.00: 154, C.

\$70.00: 159, 160, 259, 260, C.

\$77.00: 212, 218, 312, 318, 412, 418, M.

\$80.00: 161, 162, C.

\$82.50: 133, 134, 137, 138, 141, 142, 145, 146, S.

\$85.00: 251-253, 252-254, C.

\$88.00: 411, 417, M; (suites of two rooms).

\$95.00: 242 and 244, S; 241 and 243 S; 235 and 237 S; 236 and 238, S; (suites of two rooms).

\$100.00: 261-263, 262-264, C.

\$140.00: 233, 245, S; (suites of three rooms).

Rooms 111, 117, 118, 212, 218, 312, 318, 411, 412, 417, 418, M, include a large study and a good-sized bedroom. Odd numbers are on the south side of the building in Pennsylvania Hall and on the west side of the building in South College Hall.

The cost of electric light, twelve cents per week for each 40-watt Tungsten lamp or its equivalent, is charged on the regular College bills. Any damage done to a room will be charged up against the occupants. Students desiring to change rooms during the school year must obtain permission to do so from the Registrar. Only the Superintendent of Buildings and Grounds is allowed to change the locks on doors. The rooms must at all times be accessible to the College authorities. The occupants of a room will be held personally responsible for the or-

der maintained in that room. Students disregarding Faculty or Student Council Dormitory Regulations will forfeit their rights as occupants. The rooms are furnished throughout by the occupants. A janitress is employed by the College to clean thoroughly and set to rights every student room in the dormitories periodically; this service is without cost to the students. The Registrar will be glad to furnish any additional information that may be desired about dormitory rooms as well as rooms in the homes of families living in the town.

STUDENT PROPERTY.

The College disclaims all responsibility for the care or safety of any property belonging to students. With the exception of furniture, mattresses, tacked-down carpets and window shades, any student property left in a dormitory room during the summer vacation must be securely packed in barrels or boxes distinctly marked with the owner's name and the number of his room. No property should be left in closets or bureau drawers. This is to insure against possible loss and to facilitate the cleaning of the rooms.

MATERIAL EQUIPMENT

The College Library contains 22,700 volumes, besides numerous unbound pamphlets. It is a regular depository of the United States Government and the Government of the State of Pennsylvania. Several hundred volumes of public documents are annually received from these sources.

The Library is available to all students* under established regulations. During term time it is open for consultation and the drawing of books seven hours each week day, except on Saturday, when it is open for three hours. The librarian and his assistant are always ready to aid the students. The opportunities for the use of the Library are continually being increased by means of a systematic organization and the building up of a complete and attractive library of reference.

The income of a fund invested for the purpose provides for needed additions. After June 1915, five per cent of the money received from tuition and general fees will become available for library purposes.

In view of the great expense involved in the purchase of even the most necessary works in science and literature, the generous aid of the alumni and friends of the College is especially invited to the increase of this fund and to the establishment of new funds.

In the same hall with the College Library are the Libraries of the two Literary Societies. They comprise a large number of well-selected and standard volumes, which are annually increased through the income of separate funds. The Philomathean Library contains at present over 7,100 volumes; the Phrenakosmian Library over 7,150 volumes. These libraries are accessible to the members of the societies under their respective regula-

tions, and are open for the issue of books on Wednesday at 4 P. M., and Saturday at 10 A. M., during term time.

READING ROOM.

The Reading Room is well supplied with daily and weekly papers and leading literary and scientific periodicals, thus enabling the student to become acquainted with current events and contemporary, scientific, literary, and other cultural movements. An annual fee of \$1.50 is charged to each student toward its maintenance.

LABORATORIES.

The Biological Laboratories on the second floor of Glatfelter Hall consist of two large, well-lighted, communicating rooms. They are supplied with twenty-five fine microscopes, and all the other appliances necessary in carrying on the work of the course outlined in the Department of Biology.

The Chemical Laboratories in the Chemical Laboratory Building, as described on page 117, are amply equipped with all the conveniences and apparatus and supplies that are desirable in the requirements for general and analytical chemistry, including work in organic preparations, proximate analysis, examination of water, and other special subjects.

The Physical Laboratory. The lecture room is provided with a large table with sink, water, gas, and electrical connections; apparatus supports, blackboard, charts, and black curtains and a hand-painted screen for stereopticon work. The laboratories, comprising six rooms for general work, besides photographic dark rooms, store room, and storage battery room, and the lecture apparatus room are equipped with modern and carefully selected apparatus for both elementary and advanced work. Alternating and direct electric current is supplied at different points by means of a central switch board, a motor generator, and a storage battery. The apparatus

includes a Geryk double cylinder oil immersion air pump, high grade balances, spectrometers, photometer, and stereopticon; and in electricity, D'Arsonval galvanometers, Wheatstone bridges, potentiometer, voltmeters, standards of resistance, capacity, electro-motive force, and self-induction, ammeters and voltmeters for direct and alternating currents (all of the best German or American make); a complete dynamo and motor set illustrating different styles of direct and alternating current machines (induction, synchronous, three-phase, etc.); an induction coil giving an 8-inch spark, high frequency coils, electric wave apparatus, and telegraph, telephone, and wireless telegraph outfits, and Kathode ray and X-ray tubes.

ENGINEERING EQUIPMENT.

The equipment in the Engineering Departments is modern and adequate and is being augmented as necessity demands.

Instruction in mechanical drawing is given in a large, well-lighted room in Glatfelter Hall. The department is well equipped for the purpose and is supplied with drawings illustrating the best recent practice.

MECHANICAL DRAWING EQUIPMENT.

The surveying equipment has been recently increased by the purchase of a Bausch and Lomb transit and a Buff and Buff level. There are also included, in addition to a number of transits and levels, all the instruments in common use for the making of property and topographic surveys,—such as plane-table, traverse board, sextant, planimeter, level and stadia rods, tapes, etc.

The facilities for materials testing include a 100,000 pound Riehle universal testing machine, with the necessary measuring instruments for the determination of the physical properties of steel, cast iron, wrought iron, timber, concrete, etc. There is also a cement laboratory,

with a Riehle tensile briquette machine of 1,000 pounds capacity, and a variety of other apparatus, for making all the standard physical tests of cement, sand, and mortar.

The pattern shop, located in a commodious room in the basement of Glatfelter Hall, is supplied with a speed lathe and an oilstone grinder, driven by individual motors, also numerous benches and hand tools, all of the most modern type. In addition there has been provided foundry equipment of an elementary nature for illustrating the fundamental principles of moulding. By the Fall of 1915 the College will have installed a medium-sized engine lathe, a drill press, emery wheels, and numerous vises and bench tools. A portable forge with the usual collection of small tools will be added.

The foundation of an electrical engineering laboratory has been laid. By the Fall of 1915 there will be facilities for work in both direct and alternating current phenomena. The apparatus will include several direct current motors and generators, a rotary converter, a polyphase alternator, a synchronous motor, several polyphase and single phase induction motors, a number of transformers, and an assortment of direct and alternating current measuring instruments.

In connection with the College heating and pumping plant there is available for commercial testing such equipment as boilers, a gas engine, and two pumps. As necessity demands further apparatus will be added.

MUSEUM.

The Museum contains varied collections of fauna and flora and minerals, all of which are freely used in instruction. The Mineralogical Cabinet contains over 6,000 specimens, including not only very full suites of the more common and more important minerals, but also good specimens of many of the rarer minerals. The collection in Lithology numbering 3,000 specimens, and of iron in Metallurgy, have, by recent additions, become fairly rep-

representative in the most important departments of these sciences. The Botanical collection of 6,000 specimens, mainly presented by Miss Elizabeth C. Morris, of Germantown, Pa., is well arranged and contains a full representation of American Flora. A beginning has been made of a Chemical Museum—to contain specimens of raw and manufactured materials in chemical industries. Friends of our institution can greatly aid us by making additions to these collections.

BUILDINGS.

Pennsylvania Hall, erected in 1836-38, was remodeled and improved in 1889. It contains eighty-six rooms for students, many of them *en suite*, so that those who may wish to do so can have separate study and sleeping rooms. In this building are also the reading rooms of the Literary Societies and the auditorium used by the College Y. M. C. A. These rooms are all heated by steam and lighted by electricity. Sinks with running water are located on every floor, and on the first and third floors are complete lavatories with hot and cold water connected with the College system of water-works.

South College, erected in 1897, is a dormitory building of three stories accommodating about fifty students. It is finished entirely in hard wood, is heated by steam, lighted by electricity, has hot and cold water on each floor, and lavatories in convenient places. The first floor has eight rooms, each with open fire place, tile hearth, and spacious closets. These rooms may be used by one or two occupants, as preferred. On the second floor all rooms are *en suite*, each suite consisting of a study with one bedroom or two. These are also provided with hearths, closets, etc. The third floor is divided into sixteen single rooms.

Cottage Hall was built in 1856 as a double house for professors. In 1914, because of the great need for more dormitory accommodations due to the increase in the

number of students, it was transformed into a College dormitory of thirty rooms. As it is very advantageously situated on the campus near the main gateway, and is fitted up with all modern conveniences, rooms in this building are among the most desirable to be had.

Glatfelter Hall, erected in 1888-89, is used for general college purposes. It is named in honor of the late P. H. Glatfelter of Spring Grove, Pa., a former trustee, who with his family has contributed largely to the College. On the first floor are the library and reference rooms, the President's and Registrar's offices, and recitation rooms. The second floor contains five recitation rooms, the biological laboratories, a drafting room, and a large Social Hall. A large museum and two recitation rooms are on the third floor. In the north wing of the third floor is the hall of the Philomathean Literary Society; in the south wing the hall of the Phrenakosmian Literary Society. In the basement are the laboratories of the Department of Physics with the recitation rooms directly above. The newly-equipped Engineering Laboratory and Shops occupy the entire north wing of the basement.

The Brua Memorial Chapel, erected in 1889-90, is the gift of the late Col. John P. Brua, U. S. A., as a memorial to his parents. This building is used for daily prayers, for Commencement exercises, lectures, and other occasions requiring a large audience room.

The Chemical Laboratory is a frame building, erected in 1872 and in 1890 converted to its present use. It contains on one floor a large lecture room, an office, store-rooms, chemical-room, balance-room, and two laboratories—providing for one hundred and twelve persons working individually. The building is fitted with the most approved appliances; gas and water at each desk; there are ample hoods, a water-distilling apparatus and large sand bath, and other necessary apparatus. The balance-room contains balances set on pillars especially

built for the purpose. In the basement and in the attic are store-rooms.

The Astronomical Observatory, erected in 1875, is furnished with an achromatic telescope having an object glass of six and one-half inches, with a transit instrument, chronometer, and other astronomical appliances.

The Gymnasium has on the first floor ample dressing rooms and bathing facilities, and a baseball cage. On the second, or main floor, a class of sixty members can be accommodated for gymnastic drill. This floor is partly enclosed for basketball purposes. The selection of specialized apparatus in light and heavy gymnastics is varied and complete. The office, where all physical tests and measurements are taken, is also on this floor, and is furnished with a full set of anthropometric apparatus. The gallery has a good seating capacity for spectators.

The Gymnasium is open every week day from 10 A. M. to 10 P. M., and the time is apportioned between regular class practice, general practice, and games.

The Boiler House supplies the steam required for heating all the College buildings.

Besides these buildings there are on the campus the President's house and four halls erected by Greek Letter Societies.

Nixon Athletic Field. Immediately north of the College buildings is the athletic field, which is carefully graded and securely inclosed and covers an area of over seven acres. It affords room and facilities for all kinds of out-door sports. Recently the Blough running track has been built.

CLASS MEMORIALS.

As testimonials of their love for their Alma Mater and substantial tokens of gratitude for what she has done for them, the classes indicated below have donated memorials to her as follows:

Class of 1883. On the thirtieth anniversary of their graduation the members of this class donated \$500 to the College, the income from which is awarded annually, under the name of the Elinore Taylor Brewer Greek Prize, to that Sophomore who does the best work in the regular Greek class.

Class of 1893. On the twentieth anniversary of their graduation the members of this class presented the fine memorial gateway at the main entrance of the College campus. The approximate cost of this imposing and artistic structure was \$1500.

Class of 1899. On the fifteenth anniversary of their graduation the members of this class presented the furnishings of the class-room for the Department of Philosophy and Education and a departmental library for that department. This equipment, costing nearly \$600, was presented as a Class Memorial to their class-mate, the Rev. Jacob Hiram Straw, who died on the African mission field.

Class of 1902. This class presented the College a concrete walk extending from the entrance into South College Hall to the driveway in front.

Class of 1906. This class gave a concrete walk that runs across the entire front of Pennsylvania Hall connecting the various entrances.

Class of 1907. This class paid for the wiring of all the halls and rooms of Pennsylvania Hall for electric light.

Class of 1912. This class erected the handsome light post in the center of the campus, with its cluster of five

large electric light globes, and put down a concrete walk extending from this central point to Pennsylvania Hall, much of the actual labor being done by the members of the class.

Class of 1913. The gift of this class was a concrete walk which extends from Pennsylvania Hall to Glatfelter Hall, connecting with the Gymnasium, and widening into a plaza in front of the entrance to Glatfelter Hall, with two handsome electric lamp posts on the two outer corners of the plaza. This class also put down part of the concrete walk in front of Stevens Hall.

Class of 1914. This class gave a concrete walk which reaches from the main gateway to the center campus light, together with three walks extending to Brua Chapel.

Classes of 1916 and 1917. These two classes presented a concrete walk reaching from Stevens Hall to the corner of the Preparatory campus on Carlisle and Stevens streets. All the labor of putting down this walk was done by the members of these classes.

STUDENTS' INTERESTS

LITERARY SOCIETIES.

Two literary societies are connected with the College, the Philomathean and the Phrenakosmian. These exert a remarkably favorable influence on the intellectual and social culture of their members. The exercises consist of essays, orations, debates, and music. The acquaintance with parliamentary law and the practice in clear thought and effective speech which are here gained, make these societies excellent schools in good citizenship. Each society has a spacious hall on the third story of Glatfelter Hall, conveniently and handsomely furnished. Their sessions are held every Friday evening. Every student should become an active member in one of these societies.

DEBATES AND ORATORICAL CONTESTS.

During the year there are debates between teams representing the different classes, also between teams of the literary societies. The College is also represented in the Intercollegiate Oratorical Union, being associated with Franklin and Marshall, Ursinus, Muhlenburg, and Swarthmore in an annual oratorical contest.

Y. M. C. A.

The Young Men's Christian Association of the College, the second one organized in the world, is an active agent in promoting religious interests among the students. Each Sunday morning and Thursday evening a public meeting is held, addressed by invited guests or students. Various Bible and Mission Study classes are organized in college classes, fraternities, and other special groups. A salaried Y. M. C. A. Student Secretary has general direction and co-operates with the officers and committees of the association.

LECTURES.

A series of free public lectures is delivered each year by members of the Faculty and others prominent in some field of general interest.

The Y. M. C. A. conducts at very reasonable cost a series of interesting lectures and musical entertainments. Occasional lectures or addresses by prominent men are delivered before the student body.

MUSICAL ORGANIZATIONS.

Active and well trained choral and instrumental musical organizations consisting of a band, an orchestra, a guitar and mandolin club, and a glee club, add to the pleasure of their members and of the audience at their public exhibitions. These clubs usually take a ten days' trip during the winter.

ATHLETICS.

The various college athletic sports, football, baseball, basketball, and field sports, are well organized. They are recognized as an important part of college life and receive encouragement, but under such regulations as it is believed will prevent them from becoming a possible source of demoralization to the student body and from interfering with the primary work of the institution. The plan under which these sports are conducted gives the opportunity and encourages every student to take part regularly in some out-door exercise.

Students are permitted to participate in any or all branches of athletics unless parents or guardians have notified the Faculty to the contrary.

PRESS CLUB.

The chief aim of the Press Club is to bring the various interests of the College before the public through the daily papers.

PUBLICATIONS.

THE PENNSYLVANIA COLLEGE BULLETIN is published four times during the year.

"The Gettysburgian," under the control of the student body, is published weekly, and makes a specialty of College and alumni news.

"The Y. M. C. A. Hand-Book," issued at the opening of each college year, gives valuable information and suggestions to incoming students.

"The Spectrum," an annual publication of the Junior Class, contains pictorial representations of the College with its various organizations and surroundings, and useful information about students and alumni.

All the periodicals aim at enlarging the means of communication between the College and its graduates, former students, and friends. These enterprises are cordially commended to the patronage of those interested in the welfare of the institution.

ADDRESSES OF ALUMNI.

The College is anxious to keep in touch with its alumni and ex-students not graduates, and requests that all changes in address should be sent to the Registrar.


TEACHERS.

The attention of school boards, and others desiring teachers is called to the fact that it is frequently in the power of the Faculty to recommend suitable candidates. Many graduates successfully fill important positions in public and private institutions. The College course for teachers is arranged to meet the requirements of the School Code of Pennsylvania, thus securing the State Life Certificate for the graduates of the College. See page 74.

FORM OF BEQUEST.

I give, bequeath, and devise to "The Trustees of Pennsylvania College, of Gettysburg, in the County of Adams,"

in the State of Pennsylvania, and their successors and assigns forever, the sum of ——— (or shares in the bank of ———, or any other personal property or real estate, as the case may be), to be applied to the Endowment Fund of the Institution.

 A bequest to a benevolent corporation, to be legal, must be made, in Pennsylvania at least thirty days, and in New York at least sixty days, before the death of the Testator; and should be signed by two witnesses not officially related to the College.

ALUMNI ASSOCIATIONS.

The Alumni Association of Pennsylvania College holds its regular annual meeting Wednesday afternoon of Commencement Week. In 1876 the Board of Trustees granted the Association the privilege of nominating six of their number to membership in the Board, and of maintaining this number as vacancies occur.

The officers of the association are:

President:

CHARLES S. DUNCAN, ESQ., '82.....Gettysburg, Pa.

Vice Presidents:

CHARLES J. FITE, '98Pittsburgh, Pa.

PROF. CHARLES H. HUBER, '92.....Gettysburg, Pa.

HIRAM H. KELLER, ESQ., '01... ..Doylestown, Pa.

Secretary:

CLYDE B. STOVER, '94.....Gettysburg, Pa.

Treasurer:

H. C. PICKING, '79.....Gettysburg, Pa.

The various district alumni associations are active and potential factors in promoting the interests of the College and bringing the College to the notice of prospective students.

STEVENS HALL, GETTYSBURG ACADEMY

PREPARATORY DEPARTMENT

OF

PENNSYLVANIA COLLEGE

INSTRUCTORS

WILLIAM ANTHONY GRANVILLE, PH.D., LL.D.....3 College Campus
President

REV. CHARLES HENRY HUBER, LITT.D.....411 Carlisle St.
Principal and Professor of Latin and English

GEORGE MICHAEL RICE, A.M.213 Springs Ave.
Vice Principal of Stevens Hall and Instructor in
German and Greek

E. DURBIN OTT, A.B.42 Stevens Hall
Instructor in Mathematics and Science in Stevens Hall

SPURGEON MILTON KEENY, A.B.....16 Stevens Hall
Instructor in Latin and English in Stevens Hall

MISS MARY HAY HIMES, A.M.130 Carlisle St.
Preceptress

ROBERT BURNS FORTENBAUGH, A.B.....47 Seminary
Instructor in Greek

ERNEST LUTHER PEE, A.B.....26 Seminary
Instructor in History

HOMER CHARLES WRIGHT331 S.
Instructor in Mathematics

STEVENS HALL

AIM OF DEPARTMENT.

Stevens Hall is located within two minutes' walk of Pennsylvania College. The object of its foundation, which the school has steadily kept in view, was to maintain for our public an Academy under the control of college authorities. The advantages of such a combination are obvious. To students who desire to prepare for college it offers a course of preparatory instruction under the eyes of their future professors and in the line of college requirements. The school, being open at all times to visits from instructors in the College, and receiving from time to time their counsel, is able to give to those students who desire it just that preparatory study and drill which will lead to the most profitable and creditable work in the college classes. Time is concentrated upon the studies in which it is needed, and students who have satisfied the requirements in the Preparatory Department are admitted to the Freshman Class of the College upon the Principal's recommendation without further examination. On the other hand, students who do not expect to enter College, and who desire only an English education preparatory to business, teaching, etc., find in this school an academy of high grade under the supervision of college professors in a college atmosphere, and with free access to the college libraries. Near association with a college is a stimulus to study, and often awakens a desire for a higher education.

GOVERNMENT.

The Preparatory Department, though under the control of the College authorities, has a separate building and campus of its own and is under the special direction of a

Principal who is aided by a Vice Principal, two Instructors, and a Preceptress.

The school seeks to develop intelligent Christian manhood. The discipline aims at making the pupil self-governing, and leading him to habits of self-respect and self-control by training the judgment, quickening the conscience, and cultivating a delicate sense of honor.

When it is evident that a pupil has no proper appreciation of his opportunities, and is harming the school rather than receiving benefit from it, his parents are asked to remove him.

During study hours students are expected to be in their rooms, which are subject to frequent visits by instructors.

ADMISSION.

Students are admitted at any time to the grade for which they have been qualified by previous study. But it is highly important that the student enter the school as early in the course as possible. With the present requirements for admission, a hurried preparation is generally unwise and tends to retard the student's future progress, especially in Latin and Greek. Accurate scholarship, at which the school aims, can hardly be secured without long drill, especially in the languages. Without intending at all to discourage those whose circumstances rather than their desire, lead them to attempt short preparation, all who can are urged to lay the foundation carefully. An additional year at the beginning is always a gain because of the ease and thoroughness with which future work is done. The fact, however, is recognized that students differ widely in ability and industry, and every opportunity is afforded those who can do so to cover the required work in the shortest possible time.

No examinations are required for admission, the pupil being at once assigned to the class for which his previous

studies seem to have fitted him. If, upon trial, it be found that a mistake has been made, the Principal reserves the right to transfer the student to the proper grade.

Students who have advanced sufficiently in Mathematics and the English branches to enter the Freshman Class, but have not studied Latin, Greek, or German, will here find special arrangements made for their rapid advancement. Girls will be received as day scholars. A study hall has been reserved for their exclusive use, and they are not obliged to mingle with the general classes except at regular recitation periods. When at school they are under the care of a Preceptress. Refined homes for them can be secured in town at moderate rates. They will be under the care of the Principal, who will be fully informed of their conduct.

RELIGIOUS EXERCISES.

On Sunday morning the students of the Preparatory Department are required to attend worship with the College instructors and students in the College Church, or such other place of worship as their parents or guardians may designate. A Bible class is conducted by the Principal every Sunday morning and is a part of the regular course of study. Chapel service is held every morning except Saturday.

COURSES OF STUDY.

The courses of study are designed to prepare students of either sex, who desire to enter College, for the Freshman Class, and to give students who do not expect to enter College a wide intelligence, true culture, and habits of careful study and sound thinking. New and important subjects have been added, and increased attention is given to the lower classes. All students of the school have free access to the College Library, and students over fifteen years of age may join either of the College Liter-

ary Societies. There is also a Literary Society conducted by the students of the Preparatory Department.

Arrangement for instruction in music at moderate terms may be made in town without conflicting with the regular school work.

A report of the work and conduct of each student is sent home at the end of each semester, and at any other time upon request or when the Principal thinks it desirable.

There are two courses, the Classical (with Greek), and the Scientific or Academic (with German).

The subjects taught are as follows:

CLASSICAL COURSE.

Sub-Freshman Class.

Periods per Week.

5. **Latin.**—Six books of the "Aeneid"; Prose Composition.
5. **Greek.**—Three books of the "Iliad"; Prose Composition.
5. **Mathematics.**—Wentworth and Smith's "Plane and Solid Geometry."
2. **English.**—College Entrance Requirements as arranged by the National Conference on Uniform Entrance; Buehler's "Exercises in English."
2. **History.**—Myers' "Grecian History"; Myers' "Roman History."
1. **Composition.**—Woolley's "Hand-Book."
1. **Physical Culture.**

Upper Middle Class.

5. ***Latin.**—Six of Cicero's Orations; Prose Composition; Caesar (Completed).
4. ***Greek.**—Four books of Xenophon's "Anabasis"; Prose Composition.
5. **Mathematics.**—Wells' "Algebra for Secondary Schools."

*Special beginners' classes will be organized this year for students having advanced preparation in other subjects.

Periods per Week.

2. **English.**—College Entrance Requirements.
2. **History.**—West's "Modern History."
1. **Composition and Declamation.**
1. **Physical Culture.**

Lower Middle Class.

5. **Latin.**—Comstock's "First Latin Book," Second Year Latin with Caesar.
4. **Greek.**—White's "First Greek Book," with Readings.
4. **Mathematics.**—Wentworth's "Arithmetic Completed"; Wells' "Algebra."
4. **English.**—Buehler's "Grammar"; College Entrance Requirements.
2. **History.**—Montgomery's "United States."
1. **Composition and Declamation.**
1. **Physical Culture.**

Junior Class.

4. **Latin.**—Comstock's "First Latin Book."
4. **Mathematics.**—Wentworth's Arithmetic.
4. **English.**—Buehler's "Modern English Grammar."
3. **English.**—College Entrance Requirements.
4. **History and Geography.**
1. **Composition.**
1. **Physical Culture.**

Spelling is required with the English courses in the four classes.

LATIN-SCIENTIFIC COURSE.

Sub-Freshman Class.

Periods per Week.

5. **Latin.**—Six books of the "Aeneid"; Prose Composition.
3. **German.**—Grammar; Prose Composition; Reading.
5. **Mathematics.**—Wentworth and Smith's "Plane and Solid Geometry Revised."

2. **English.**—College Entrance Requirements as arranged by the National Conference on Uniform Entrance. Buehler's "Exercises in English."
2. **History.**—Myers' "Grecian History"; Myers' "Roman History."
1. **Composition.**—Woolley's "Hand-Book."
1. **Physical Culture.**

Upper Middle Class.

5. ***Latin.**—Six of Cicero's Orations; Prose Composition; Caesar Completed.
4. ***German.**—Vos's "Essentials" and Reading.
5. **Mathematics.**—Wells' "Algebra for Secondary Schools."
2. **English.**—College Entrance Requirements.
2. **History.**—West's "Modern History."
1. **Composition and Declamation.**
1. **Physical Culture.**

Lower Middle Class.

5. **Latin.**—Comstock's "First Latin Book"; Second Year Latin with Caesar.
4. **German.**—Vos's "Essentials."
4. **Mathematics.**—Wentworth's "Arithmetic Completed"; Wells' "Algebra."
4. **English.**—Buehler's "Grammar"; College Entrance Requirements.
2. **History.**—Montgomery's "United States."
1. **Composition and Declamation.**
1. **Physical Culture.**

Junior Class.

4. **Latin.**—Comstock's "First Latin Book."
4. **Mathematics.**—Wentworth's "Arithmetic."
4. **English.**—Buehler's "Modern English Grammar."

*Special beginners' classes will be organized this year for students having advanced preparations in other subjects.

3. English.—College Entrance Requirements.

4. History and Geography.

1 Composition.

1. Physical Culture.

Spelling is required with the English courses in the four classes.

BUSINESS.

A course of instruction is given in Book-keeping when desired. This course is intended to fit young men for a business career.

PHYSICAL EXERCISE.

The building is surrounded by large and pleasant grounds adapted to football, baseball, tennis, and other out-door sports; and in addition to this the students enjoy all the privileges and instruction of the College Gymnasium.

BUILDINGS AND ROOMS.

The building, located on a slight eminence north of town, is heated throughout by steam, lighted by electricity, and supplied with pure artesian water. A comfortable toilet room has been placed on the first floor. The rooms on the third floor are now arranged *en suite*, with a broad archway separating the study and sleeping apartments. On the second floor the rooms are separate.

The rooms are furnished with heavy oak wardrobes, bookcases, washstands, tables, and chairs. Iron enameled beds, complete with springs and mattresses, are also provided. Two students occupy two rooms, one for studying, the other for sleeping. The rooms are furnished with two single bedsteads, mattresses, chairs, table, bookcase, clothes closet, window curtains, and washstand. The other articles needed for the rooms, and to be furnished by the occupants, are as follows: Washbowl and pitcher, mirror, slop pail, and carpet. The carpet for the third floor study room is $10\frac{1}{2}$ by $10\frac{1}{2}$, sleeping room $10\frac{1}{2}$ by 11, for a second floor study room 10 by $12\frac{1}{2}$.

Each student must also be provided with towels, four sheets for single bed, two pillow slips, a spread, comforts and blankets, and feather pillow.

EXPENSES.

	First Semester	Second Semester
Tuition and General Fees.....	\$32.00	\$32.00
Room-rent, use of furniture, heat, light..	19.20	19.20
Gymnasium fee	3.00	3.00
*Athletic fee	4.00	4.00
Total	\$58.20	\$58.20

Beginners' classes in Latin, Greek, and German will be organized during the first week in April. Students entering the school at this time are charged two-thirds of the fees for the second semester.

Students do not board in the building, but in clubs and private families, at a cost of from \$2.50 to \$3.50 a week. Washing is about \$1.75 a month. A deposit of one dollar will be required at the beginning of the year to insure the return of keys and the proper care of the room. This will be returned to the student at the end of the year if no damage has been sustained. Day students are charged for tuition, general fees, and the athletic fee, but the gymnasium fee is optional.

A discount of five (5) per cent is allowed on all dues paid within six weeks of the opening of each semester. Money entrusted to the Principal for the use of students will be expended as desired.

For further information address,

REV. CHARLES H. HUBER, Litt.D., Principal.

*By payment of this fee students are entitled to free admission to all inter-collegiate contests. Students who do not feel able to pay the fee can be excused by making application to the Athletic Council.

STUDENTS IN COLLEGE 1914—1915

GRADUATE STUDENTS. (NON-RESIDENT).

Bowers, Ross Eldon	Braddock
Brumbaugh, Roy Talmage	Trenton, N. J.

GRADUATE STUDENTS. (RESIDENT).

Amspacher, Victor Earl	York
Beard, Clinton William	Gettysburg
Creager, Paul Snyder	Gettysburg
Fasick, Clyde Augustus	Mifflintown
Macdonald, Iris Andrey	Gettysburg
Rupp, John Reigle	Gettysburg

SENIOR CLASS.

Candidates For the Degree of Bachelor of Arts.

P. indicates Pennsylvania Hall; S, South College; C, Cottage Hall; and S H, Stevens Hall.

Group.

Baker, Charles Wolf	1	New Oxford	101-103 P.
Bayly, Mary Louise ✓	2	Gettysburg	301 York St.
Bittle, Thomas Clifford	2	Myersville, Md.	260 C.
Brumbaugh, Ruth Marguerite	2	Roaring Spring	321 Carlisle St.
Burford, Ann Elizabeth Irene ✓	2	Kittanning	418 Carlisle St.
Bussard, John Franklin	2	Myersville, Md.	418 P.
Butt, John	2	Gettysburg	123 Carlisle St.
Cessna, Charles Paul	1	Rainsburg	218 P.
Cree, Willard Herman	2	Blandburg	338 S.
Crider, Paul Mower	2	Chambersburg	157 C.
Day, William Charles	1	Baltimore, Md.	120 P.
Derr, Benjamin Franklin, Jr.	1	Pottsville	108 P.
Eyler, Edgar Josiah	1	Thurmont, Md.	127 P.
Freas, Richard	1	New York, N. Y.	321 P.
Gable, Frank Dean	2	Columbia	348 S.
Garns, Robert Edward	1	Chambersburg	417 P.
Gruber, Charles	1	Philadelphia	118 P.
Hashinger, William Roy	1	Coatesville	326 P.
Hollinger, Archie Reed	1	Gettysburg	Newville Road
Ikeler, Donald Fisher	2	Bloomsburg	245 S.
Keefauver, Lloyd Conover	2	Gettysburg	221 P.
Kulp, Benjamin Frank	1	Phoenixville	119 P.
Lotz, James Milton	1	Altoona	W. Water St.
McSherry, Hubert Luther	1	North Washington	208 P.
Miller, Mahlon Steck	1	Philipsburg	111 P.
Miller, Viola Elizabeth ✓	2	Gettysburg	267 Baltimore St.
Mock, Robert Emery	1	Newmanstown	419-420 P.

	Group.		
Nixon, Thomas Hay	1	Gettysburg	154 Carlisle St.
Quay, Paul William	1	Phoenixville	211 P.
Rudisill, Nina Viola ✓	2	Littlestown	Carlisle St.
Shank, William Raymond	1	New Oxford	128 York St.
Sieber, Helen Evangeline	2	Gettysburg	37 W. Middle St.
Simon, Walter Vose	1	Hagerstown, Md.	212 P.
Taylor, Amos Eli	1	Glenville	255-257 C.
Trout, John Henry Leader	1	Pittsburgh	122 P.
Tudor, Virginia Townsend ✓	2	Gettysburg	117 Springs Ave.
Wagner, John Robert	2	Stone Church	101-103 P.
Wagner, Paul Schleppy	1	Hazleton	255-257 C.
Wickersham, Frank Brewster	2	Steelton	233 S.
Wright, Homer Charles	1	Connellsville	331 S.

Candidates for the Degree of Bachelor of Science.

Arnold, Thomas Gephart	6	Bedford	323 P.
Book, George Nieman	3	Harrisburg	236-238 S.
Fisher, Owen Lamont	8	Foltz	207 E. Middle St.
Folk, Edwin Luther	3	York	211 P.
Geesey, Adam F., Jr.	6	York	253 C.
Hesse, William Nelson	5	Coatesville	318 P.
Hollinger, Jacob Edward, Jr.	3	Carlisle	783 Baltimore St.
Houser, John Grover	3	Ruffsedale	333 S.
Kelly, James Franklin	6	Gettysburg	58 York St.
Liebensberger, Stephen Henry	3	Hazleton	347 S.
Lotz, Paul Lange	4	Baltimore, Md.	343 S.
Musselman, Luther Kyner	5	Gettysburg	247 Baltimore St.
Philson, Robert, Jr.	6	Berlin	217 P.
Schrack, Lloyd Ernest	4	Columbia	347 S.
Shook, Clarence Raymond	4	Greencastle	221 P.
Smith, Winfred Wenner	3	Lehigh	312 P.
Thompson, Charles Herbert	6	Waynesboro	160-162 C.
Weidner, Harvey Samuel	3	York Springs	333 S.
Seniors 58.			

JUNIOR CLASS.

Candidates For the Degree of Bachelor of Arts.

Basehoar, Ethel Ruth ✓	2	Littlestown	321 Carlisle St.
Bell, Martin Luther	1	Big Spring, Md.	423 P.
Bittle, Foster David	1	Myersville, Md.	418 P.
Collins, Joseph Warfield	2	Gettysburg	319 P.
Dise, Eva ✓	2	Lyon Station	145 Buford Ave.
Dorsey, Besse Viola ✓	2	Gettysburg	141 Baltimore St.
Garrett, Wouter Van	1	Hanover	218 P.
Glaes, James Sheaffer	1	Coatesville	319 P.
Grove, William Mervin	2	Red Lion	117 P.
Harbach, Harrison Franklin	2	Reading	212 P.
Hershey, Phares Robert	2	York	135 N. Washington St.
Hinman, Willis Stuart	1	Lynn, Mass.	305 P.
Hofmann, Frederick William	1	Altoona	422-424 P.
Keller, Herman August	1	Baltimore, Md.	258 C.
Krebs, Amos John	2	Glenville	259 C.
Lantz, Glenn Otto	1	Watsonstown	245 S.
McDonald, James Enzer	1	Aspinwall	422-424 P.

	Group.		
Mayers, Irving Russell	1	Littlestown	121-123 P.
Mehring, Percy Leroy	2	Taneytown, Md.	304 P.
Rechard, Ottis Howard, Jr.	1	York	304 P.
Reen, Sarah Hunter	2	Gettysburg	144 Springs Ave.
Rehmeyer, Lewis Herman	1	Glen Rock	306 P.
Rockey, Ordean	2	Stone Harbor, N. J.	307 P.
Rothfuss, Edgar Lloyd	1	Montoursville	226 P.
Rudisill, Andrew Earl	1	Hanover	302 P.
Rudisill, Jacob Emanuel	1	Gettysburg	W. Lincoln Ave.
Sammel, William Raymond	1	Bedford	218 P.
Simonton, Chester Stewart	1	Altoona	402 P.
Snyder, Lewis Neiffer	1	Harrisburg	421 P.
Spangler, John Elmer	1	Gettysburg	419-420 P.
Stitt, Hugh Iseman	1	Ford City	228 P.
Stoudt, Lettie Mabel ✓	2	Lenhartsville	145 Buford Ave.
Sunday, William Franklin	1	York	223 P.
Swartz, Joshua Goheen	1	Harrisburg	159-161 C.
Taughinbaugh, Arthur Guy	2	Gettysburg	128 York St.
Tome, John Supplee	1	Maytown	412 P.
Trattner, Norman Frey	2	York	401 P.
Webner, Clarence George	1	Harrisburg	308 P.
Weidley, Paul Albert	1	Altoona	402 P.
Yagle, Jay Arthur	2	York	259 C.

Candidates For the Degree of Bachelor of Science.

Albert, LeRoy	4	Lebanon	344 S.
Appler, Guy Milton	4	Gettysburg	26 E. High St.
Bringman, Jay William	5	Gettysburg	Harrisburg Road
Brooks, Karl Smith	6	York	327 P.
Buehler, Martin Howard	5	Germantown	159-161 C.
Cassidy, James Clyde	6	Altoona	145 S.
Crilly, Alfred Barry	4	Altoona	241-243 S.
Faber, Fred Samuel	4	Gettysburg	28 Chambersburg St.
Frysinger, Jacob	4	Manchester	118 P.
Hoar, Clarence Victor	6	Lancaster	341 S.
Hoch, Ralph William	6	Reading	336 S.
Hurd, Fritz Draper	5	Williamsport, Md.	235-237 S.
Keckler, Grover Patterson	3	Gettysburg	87 Steinwehr Ave.
Kendlehart, George Bowen	4	Gettysburg	40 W. Middle St.
Kennedy, Edwin Bower	5	Harrisburg	342 S.
McCollough, Charles Boyd	7	Chicora	325 P.
Mahaffie, James Eugene	4	Renovo	142 S.
Monk, Thomas Anderton, Jr.	7	Turtle Creek	222-224 P.
Neu, Paul William	4	West Hoboken, N. J.	346 S.
Nicholas, John Spangler	5	Washington, D. C.	134 S.
Park, James Loder	5	Indiana	344 S.
Patrick, William Henry, Jr.	8	Harrisburg	131 N. Washington St.
Reinecker, Jacob Howard	4	Gettysburg	341 York St.
Rice, Statton Luther	7	Marysville	233 S.
Roth, George	6	Jersey City, N. J.	228 P.
Scheffer, George Eicholtz	8	Harrisburg	142 S.
Schwartz, Ernest David	6	Gettysburg	R. D. No. 1
Smith, Donald Van Dyke	5	Lehigh	312 P.
Taylor, Will Sentman	5	Gettysburg	19 E. High St.

Group.

Trundle, George Hedges	5	Frederick, Md.	125 P.
Weimer, Marshall Filler	6	Clearville	242-244 S.
Wray, Stanley Manners	5	Leechburg	260 C.
Zerby, Harry Ellsworth	5	Steelton	225 P.

Juniors 73.

SOPHOMORE CLASS.

Candidates For the Degree of Bachelor of Arts.

Ashton, Morville	1	Trucksville	31 W. Water St.
Bentz, Marie Elizabeth	2	Gettysburg	26 Stevens St.
Bink, Howard Frank	1	Harrisburg	201 P.
Bookhultz, George Elmer	1	Washington, D. C.	427 P.
Bortner, Minnie May ✓	2	Glenville	218 N. Stratton St.
Braunlein, John Howard	1	Baltimore, Md.	258 C.
Brenneman, Willis Raymond	1	Spring Grove	406-408 P.
Carlson, Raymond Albert	1	Renovo	146 S.
Diller, Charles Slagle	2	New Oxford	27 W. Franklin St.
Duncan, Charles William	2	Gettysburg	109 Lincoln Ave.
Eckman, George Sherman	1	Kingston	428 P.
Fink, James Russell	1	York	312 P.
Fisher, Henry Earl	1	Clearfield	412 P.
Frommhagen, Frederick Carl	1	Oneonta, N. Y.	353 C.
Hallenbeck, Chester Traver	1	Guilderland Centre, N. Y.	255-257 C.
Hankey, Ralph Vernon	2	Apollo	137 S.
Hershey, Clarence Henry	1	Thomasville	406-408 P.
Hesson, Raymond Luther	1	Taneytown, Md.	204 P.
Horich, Paul Jacob	1	Westminster, Md.	427 P.
Keener, Robert Edward	1	Dallastown	306 N. Stratton St.
Kunkel, Norman Wilbur	1	Dover	405 P.
Lakin, Edmund Aldine	2	Hagerstown, Md.	W. Water St.
Lang, Robert Luther	2	Williamsburg	129 N. Washington St.
Loudenslager, Paul Edward	1	Harrisburg	332 S.
Maxwell, David Elias	1	Jeannette	105-107 P.
Mehring, Herman Stanley	1	Philadelphia	203 P.
Peters, William Howard	1	Dallastown	220 P.
Ringler, Alexander Preston	2	Berlin	256 C.
Rost, Lawrence Eugene	2	Red Lion	117 P.
Schillinger, George William	1	Harrisburg	332 S.
Sheads, Marjorie Louise	2	Gettysburg	115 S. Stratton St.
Sincell, Charles Morris	2	Oakland, Md.	307 P.
Slifer, Luther Walter	1	St. Thomas	407 P.
Smeich, Earl Allison	1	York	303 P.
Snyder, John Houston	1	Newville	335 S.
Sorrick, Raymond Clyde	2	Williamsburg	422-424 P.
Sowers, Lauran Delk ✓	2	Hagerstown, Md.	W. Water St.
Spangler, John Allen, Jr.	2	Spring Grove	Observatory
Taughinbaugh, Minerva Irene	2	Gettysburg	128 York St.
Venable, Charles Leslie	1	Chambersburg	322 P.
Williams, Ira Alvin	1	New Freedom	412 P.

Candidates For the Degree of Bachelor of Science.

Bennett, John Crist	4	York	118 P.
Boden, Robert	6	Burnham	425 P.
Boyson, William Andrew	7	Harrisburg	236-238 S.

Group.			
Campbell, William Clifford	4	Butler	206 P.
Cannen, James Vernon	7	Baltimore, Md.	219 P.
Clemens, Arthur Knisely	4	Steelton	225 P.
Daugherty, Davis Clifton	6	Butler	341 S.
Embich, John Reigle	5	Shippensburg	Observatory
Fager, Charles Buffington	5	Harrisburg	262-264 C.
Flenner, Robert Wareham	5	Tyrone	417 P.
Geiser, John Dixon	10	Pen Mar	
Hatch, James Albert	5	Tarentum	146 S.
Helman, Clarence E.	4	Lurgan	358 C.
Hixson, George Paul	3	Ruffsedale	301 P.
Huff, Myron Reed	4	Gettysburg	27 W. Franklin St.
Kuhlman, Frederick L. W.	5	Ursina	Springs Ave.
Kunkel, Otto	4	Glen Rock	117 P.
Mead, Leon Roy	10	Newberry	
Miller, Charles Edward	8	Harrisburg	245 S.
Newcomer, Samuel Herbert	3	Smithsburg, Md.	406-408 P.
Orris, Adam Leroy	5	Mechanicsburg	141 S.
Rupp, Jacob Carroll	4	Hanover	326 P.
Ruth, Harry Foss	3	Scottdale	301 P.
Schaeffer, Lloyd Diehl	6	Hanover	235-237 S.
Shearer, Roger Loucks	4	York Haven	219 P.
Snyder, Alton Bassler	8	Harrisburg	404 P.
Sowers, J. Claire	6	McKnightstown	212 P.
Springhorn, Charles Edwin	3	New York, N. Y.	207 P.
Starr, Henry Etter	4	Millersburg	Stevens Hall
Stermer, Paul Ernest	7	York	104 P.
Williams, Frank Billmeyer	5	Bloomsburg	245 S.
Zane, Ida Dorothy ✓	3	Gettysburg	227 Carlisle St.
Zeilinger, Albert Henderson	3	Williamsburg	105-107 P.
			Sophomores 74.

FRESHMAN CLASS.

Candidates For the Degree of Bachelor of Arts.

Baker, Robert Clinton	2	Bloomsburg	133 S.
Bare, Ethel Grace ✓	1	York	133 N. Washington St.
Becker, Horace Gilbert	1	Hanover	157 C.
Bortz, Roland George	1	Apollo	403 P.
Creager, Harold Luther	1	Gettysburg	248 Baltimore St.
Deardorff, Eva Clare ✓	2	Gettysburg	401 Baltimore St.
Deibert, Allyn Thomas	2	Schuylkill Haven	153 C.
Duff, Stewart Emmons	2	Altoona	254 C.
Farmer, Clayton Stultz	2	Marietta	403 P.
Floto, Max Crawford	2	Connellsville	334 S.
Glunt, Arthur William	2	Altoona	254 C.
Gotwald, Luther Alexander	1	York	262-264 C.
Hamme, John Alfred	2	York	261-263 C.
Harbold, Ralph Edward	2	Mt. Carmel	106 P.
Herman, Clyde Henry	1	York	411 P.
Kissinger, Lillian Elizabeth ✓	2	Gettysburg	Baltimore St.
Knubel, Frederick Ritscher	1	New York, N. Y.	138 S.
Laird, Robert Malcolm	1	Huntingdon	31 W. Water St.
Lecrone, John Gladfelter	2	York	123 Springs Ave.

	Group.		
McCollough, John Milton	2	Chicora	325 P.
Monk, Clarence Burleigh	2	Turtle Creek	222-224 P.
Musselman, Helen Nunemaker	2	Gettysburg	247 Baltimore St.
Ricker, Charles Cyrus	1	Huntingdon	31 W. Water St.
Rouzer, William Henry	1	Gettysburg	Delap Ave.
Saul, Harry Luther	1	Trenton, N. J.	202 P.
Shearer, Paul Bomberger	1	Shippensburg	328 P.
Snider, Verl Eugene Cluts	1	Taneytown, Md.	111 P.
Stonesifer, Wade Earl	1	Emmitsburg, Md.	28 Cham'b'g St.
Troxell, Charles William	2	Gettysburg	29 Hanover St.
Wagner, Ralph LaShelle	1	Gordon	202 P.
Weaver, Lorna Jeannette ✓	2	Gettysburg	68 W. High St.
Swoope, Elwood	1	Altoona	426 P.

Candidates For the Degree of Bachelor of Science.

Baker, Ernest William	5	Lancaster	105 York St.
Barbehenn, Henry Edward	5	Gettysburg	218 N. Stratton St.
Barbehenn, John Berthold	3	Jersey City, N. J.	218 N. Strat'n St.
Bennett, Victor Wilson	4	Frostburg, Md.	360 C.
Bowers, Clarence Edward	6	York	240 S.
Brown, Harry Alvin	5	Thomasville	123 Springs Ave.
Buck, Edward Hastings	5	Penbrook	353 C.
Buehler, William Edgar, Jr.	6	Germantown	159-161 C.
Buffington, Chester Miles	9	Harrisburg	154 C.
Cadman, Eugene Etwell	4	Millville	418 P.
Croll, John	3	Middletown	410 P.
Eberly, Seibert Durboraw	4	Chambersburg	354 C.
Elscheid, John R.	8	Harrisburg	337 S.
Ernest, Jay Blair	6	Mifflintown	227 P.
Finn, Howard Nelson	4	Kingsley	233 S.
Fleck, George Slayman	6	Altoona	235-237 S.
Gingrich, Luther Raymond	9	Waynesboro	359 C.
Harper, William Butler	4	Martinsburg, W. Va.	158 C.
Krissinger, Charles Stewart	7	Berlin	217 P.
Lins, Harry William	7	Lewistown	31 W. Water St.
Little, Percell Haydn	5	Hanover	241-243 S.
McCreary, Ralph Work	4	Indiana	209 N. Washington St.
McKee, Charles William	9	Butler	206 P.
McNabb, Wallace Morgan	4	Belleville	362 C.
Matter, Lawson Deacon	8	Harrisburg	154 C.
Mellinger, Wilbur Sittler	6	Leetonia, Ohio	160-162 C.
Mercer, Robert Honey	7	Bloomsburg	133 S.
Mizell, Russell Francis	5	Gettysburg	Harrisburg Road
Orr, James Carlyle	4	Indiana	305 P.
Poust, George Standish	5	Hughesville	253 C.
Power, Edmund Emanuel	7	Gettysburg	316 Baltimore St.
Rebuck, Walter Edgar	4	Shippensburg	328 P.
Rouzer, Harvey Webster	4	Gettysburg	Delap Ave.
Royer, James Andrew	6	York	411 P.
Runde, Henry August	8	Jersey City, N. J.	159-161 C.
Sachs, George Amos	4	Gettysburg	140 E. Middle St.
Scheffer, Louis Kossuth	8	Harrisburg	337 S.
Secrist, Mark Howard	3	Hanover	261-263 C.
Settemeyer, Fred Henry	4	Gardnerville, Nev.	134 S.

Group.

Shockey, Ralph Irl	3	Waynesboro	359 C.
Shriver, Ralph Edwin	4	Chambersburg	322 P.
Snyder, Arthur Kenneth	8	Vandergrift	342 S.
Snyder, Charles Franklin	9	Millersburg	410 P.
Stratten, Harry Theopholis	8	Chambersburg	354 C.
Taylor, George Cornwell	9	Gettysburg	19 E. High St.
Trump, Frank Myers	5	Martinsburg, W. Va.	158 C.
Turnbull, Merle E.	6	York	140 S.
Weigel, Frank Moore	5	Columbia	345 S.
Wells, Hibbert Preston	10	Chester Springs	E. Water St.
Wible, Charles McCreary	5	Gettysburg	Emmitsburg Road
Wilshusen, Herbert Frank	5	New York, N. Y.	138 S.
Wolf, Roy Clarence	7	Gettysburg	Steinwehr Ave.
Wright, Isaac Clayton	7	Altoona	426 P.

Freshmen 85

Partial Course Students.

Beachy, Wilbert Hoffman		Somerset	331 S.
Beale, Elmer Ross		Mifflintown	425 P.
Bietsch, Fred Wilmer		Chambersburg	205 P.
Bostock, Howard		Wilmerding	218 P.
Brame, Charles Arthur		Idaville	320 P.
Bream, John William		Cashtown	202 Carlisle St.
Brumbaugh, Luther Truman		Roaring Springs	327 P.
Craig, Melvin Lewis		Butler	428 P.
Craumer, Earnest W.		Thomasville	123 Springs Ave.
Crawford, Lillian Mark ✓		Hagerstown, Md.	63 Lincoln Ave.
Dodd, William Earle		Martinsburg, W. Va.	362 C.
Enke, Sheldon Alonzo	6	Nanticoke	142 S.
Grace, Frank Nelson		South Amboy, N. J.	360 C.
Granville, Rachel		Gettysburg	3 Campus
Hall, Warren Wesley		Harrisburg	137 S.
Jeffery, Lawrence Harry		Baltimore, Md.	240 S.
Keller, John Henry		Philadelphia	203 P.
Kendlehart, Joseph David		Harrisburg	W. Water St.
Kerper, Edward Pelham		Harrisburg	324 P.
Kwilinski, Theofil Stanislaus		South Amboy, N. J.	360 C.
Leamy, George Fred		New York, N. Y.	145 S.
McElwain, Howard Byer		New Park	357 C.
Montgomery, Chas. Sumner		Roselle Park, N. J.	242-244 S.
Orris, Emory Clyde		Mechanicsburg	141 S.
Pennock, Henry Huff		Altoona	160-162 C.
Potter, David Kenneth		Altoona	426 P.
Reiff, Harry Bradford	6	Collegeville	327 P.
Sheffer, Paul Ritchie		Virginia Mills	Virginia Mills.
Stoney, Michael Joseph		Phoenixville	104 P.
Thompson, Wm. Ambrose		Waynesboro	160-162 C.
Titzel, William Walton		McKeesport	201 P.
Weigel, George Brown		Columbia	345 S.

Partial Course 32.

1914 STUDENTS.

*Gauger, William Clarence	McEwensville
*Nightingale, Henry Billington	Philadelphia

*Entered after publication of 1913—14 Catalogue. They are not in College this year.

STUDENTS IN THE ACADEMY

SUB-FRESHMAN CLASS.

Angst, Roy Emerson	Pine Grove	41 S. H.
Baker, Ralph Wolf	New Oxford	46 S. H.
Barshinger, Henry Stephen	York	249 Carlisle St.
Book, John Edward	Harrisburg	45 S. H.
Brame, Ralph Emerson	New Oxford	320 P.
Butt, Sarah Katherine	Gettysburg	123 Carlisle St.
Butt, Amelia	Gettysburg	123 Carlisle St.
Craig, Melvin Lewis	Butler	428 P.
Deardorff, Boyd Harold	Dillsburg	39 S. H.
Earley, Edwin Armistead	Hinton, W. Va.	161 C.
Gilliland, Samuel Alexander	Gettysburg	239 Carlisle St.
Gold, Frank Albert	Butler	38 S. H.
Haines, Dale Corbin	Altoona	118 P.
Haldeman, Ward Franklin	Pine Grove	41 S. H.
Hines, Donald Eugene	Braddock	23 S. H.
Howard, Earl Nycum	Everett	240 S.
Howard, Herbert William	Toronto, Canada	305 P.
Kauffman, Earl Lemuel	East Berlin	29 S. H.
Keller, Lloyd Monroe	Shrewsbury	28 S. H.
Lampe, Russell Franklin	Altoona	320 P.
Lybarger, Donald Fisher	Harrisburg	46 S. H.
Mark, George Albert	Lancaster	348 S.
Miller, John Bringman	Spring Grove	40 S. H.
Miller, Robert Sheridan	Johnstown	27 S. H.
Morrison, William Earl	York	39 S. H.
Mummert, Lewis Jacob	Hanover	24 S. H.
Olinger, Lovinia Ruth	Gettysburg	34 W. Middle St.
Philips, Allen Guy	East Berlin	32 S. H.
Plank, John Earl	Gettysburg	R. R. 4
Rowe, Charles	Roland Park, Md.	363 C.
Rudisill, Ruth A.	Gettysburg	Lincoln Ave.
Shaub, Paul Daniel	New Freedom	38 S. H.
Simpson, Lowell Vogel	Coleman	168 Carlisle St.
Snyder, William Hood	Duncanon	43 S. H.
Stahler, Alan Donald	Lebanon	43 S. H.
Waite, James Alexander	Delmont	23 S. H.
Weaver, Howard Henry	Gettysburg	70 Stevens St.
Widder, George McAllister	Harrisburg	29 S. H.

Sub-Freshmen, 38.

UPPER-MIDDLE CLASS.

Blocher, Charles Huber	Gettysburg	371 Carlisle St.
Buedinger, William Anton	Jersey City, N. J.	321 P.
Ebbeka, Thompson Gillespie	Meysersdale	40 S. H.

Epley, Clarence William	Gettysburg	351 York St.
Feiser, Harry Nelson	East Berlin	33 S. H.
Hartman, Samuel Allen	Harrisburg	Lincoln Ave.
Kattenhorn, Christian Chas.	Newark, N. J.	321 P.
Kolb, Raymond Earl	Cumberland, Md.	45 S. H.
Lippy, John David, Jr.	Gettysburg	47 Chambersburg St.
Miller, Guy Edward	Newville	407 P.
Miller, Maurice Harry	Gettysburg	80 Steinwehr Ave.
Munnich, John Henry	New York City	30 S. H.
Pfeffer, Fred George	Gettysburg	330 Baltimore St.
Putman, Dwight Frederick	Somerset	129 N. Washington St.
Royer, David Amos	York	411 P.
Shaulis, Earl Frederick	Somerset	129 N. Washington St.
Snyder, John Galleher	Gettysburg	321 Carlisle St.
Williams, Emory Ray	Gettysburg	248 York St.
Worley, William Carson	Lititz	358 C.
Young, Henry Beck	Hagerstown, Md.	305 P.
		Upper Middle, 20.

LOWER-MIDDLE CLASS.

Annan, James Cochran	Emmitsburg, Md.	43 S. H.
Bigham, Charles Andrew	Gettysburg	R. R. 3
Boyer, Merle Xerxes	Chicago, Ill.	44 S. H.
Dykeman, Welly Edward	Shippensburg	44 S. H.
Gardner, Glenn Markley	Gettysburg	303 N. Stratton St.
Gearhart, James Harvey	Blue Ridge Summit	
Hill, Melvin Wilber	Gettysburg	225 York St.
Hollinger, Charles Raymond	Gettysburg	R. R. 6
Kline, John Webster	Washington, D. C.	45 S. H.
Landis, Henry Musser	Fairfield	
Neely, Sarah Cassatt	Gettysburg	71 Lincoln Ave.
Scherdel, William Henry	Hanover	
Schroder, Grace Irene	Gettysburg	253 Baltimore St.
Shaulis, Samuel Sylvester	Somerset	129 N. Washington St.
Warner, Charles Anderson	Blue Ridge Summit	
Waybright, Earlington Jacob	Gettysburg	27 S. H.
Weiser, John Monroe	Gettysburg	46 E. Middle St.
		Lower Middle, 17.

JUNIOR.

Huber, Elizabeth Annan	Gettysburg	411 Carlisle St.
Warner, Laurean	Blue Ridge Summit	
		Juniors 2.

1914 STUDENTS.

*Deatrick, Robert Paterson	Gettysburg	46 S. H.
*Keckler, Beulah Virginia	Gettysburg	
*McGuigan, Minnie Mae	Gettysburg	R. R. 7

*Entered after publication of 1913-14 Catalogue. They are not in school this year.

SUMMARY.

Number Students in College 1914-1915.

Graduates	8
Seniors	58
Juniors	73
Sophomores	74
Freshmen	85
Partial	32
1914 Students	2
<hr/>	
Collegiate Department	332
Academy	80
<hr/>	
Total	412

COMMENCEMENT 1914

Salutatory.

John Ward Fisher

Commencement Orator.

Supt. Nathan C. Schaeffer, LL.D., Harrisburg, Pa.

Valedictory.

Spurgeon Milton Keeny.

GRADUATES.

Bachelor of Arts.

Clyde Lower Bream
Raymond Lewis Carbaugh
Clyde Augustus Fasick
John Ward Fisher
Raymond Edward Haas
Clement Roscoe Hoffman
Spurgeon Milton Keeny
Frank Henry Kramer
James Enfield Leaman
John Roy Lovell
Joseph McGill
Monroe Eugene Miller

Oscar Berger Noren
Glenn Fox Poffinberger
Titus Calvin Rohrbaugh
Charles Henry Shauck
Marion Jean Sheely ✓
Thomas Leslie Smith
Alfred Towne Sutcliffe
Marguerite Eleanor Weaver ✓
Adolph C. Weidenbach
Samuel Evarisus Wicker
Robert Jacob Wolf

Bachelor of Science.

Victor Earl Amspacher
Clinton William Beard
Claude Francis Beegle
Chester Franklin Coleman
Frederick Bowman Dapp
Norman Edward Diehl
Edgar McCreary Faber
George Henry Haberlen
John Franklin Houck, Jr.
George Edgar Miller

John Croft Myers
Oliver Kane Reed
John Reigle Rupp
William Henry Sandlas
George Harrison Schaeffer
Samuel Kline Spicher
Otho Leroy Thomas
Ralph Montineau Weaver
Lester Stewart Witherow

ADVANCED DEGREES.

Master of Arts.

Virginia M. Beard, '09.....Gettysburg, Pa.

Master of Science.

Clifford C. Hartman, '07Pittsburgh, Pa.

GENERAL FINAL HIGHEST HONORS.

Spurgeon M. Keeny.

HIGHEST CLASS HONORS.

Senior.

Spurgeon M. Keeny

Junior.

Charles Gruber.

CLASS HONORS.

Senior.

Victor E. Amspacher
Edgar M. Faber

John W. Fisher
Frank H. Kramer

John R. Lovell

Junior.

Winfred W. Smith

John H. L. Trout

Charles P. Cessna

Sophomore.

Eva Dise
Willis S. Hinman

Lewis N. Snyder
Ottis H. Rechard, Jr.

Freshman.

Lawrence E. Rost

DEPARTMENT FINAL HONORS IN CHEMISTRY.

Victor E. Amspacher

DEPARTMENT FINAL HONORS IN GERMAN.

Marion Jean Sheely

GRÆFF PRIZE IN ENGLISH.

Spurgeon M. Keeny

With Honorable Mention of

Glenn F. Poffinberger

HASSLER PRIZE IN LATIN.

Charles Gruber

With Honorable Mention of

Archie R. Hollinger

Nina V. Rudisill

SNYDER PRIZES IN SOCIAL PROBLEMS.**First Prize.**

Charles H. Shauck

Second Prize.

Paul S. Wagner

With Honorable Mention of

Victor E. Amspacher

Charles Gruber

PITTSBURGH PRIZE IN CHEMISTRY.

Lloyd E. Schrack

With Honorable Mention of

Stephen H. Liebensberger

Luther K. Musselman

BAUM PRIZE IN MATHEMATICS.

Ottis H. Rechard

With Honorable Mention of

Clarence G. Webner

Lewis N. Snyder

BREWER PRIZE IN GREEK.

Willis S. Hinman

With Honorable Mention of

Lewis N. Snyder

MUHLENBERG FRESHMAN PRIZE.

Willis R. Brenneman

With Honorable Mention of

David E. Maxwell

PRIZES IN DEBATE.

First Prize.

John S. Nicholas

Chester S. Simonton

John E. Spangler

Second and Third Prizes.

Donald F. Ikeler

James M. Lotz

John H. L. Trout

REDDIG PRIZE IN ORATORY.

Hubert L. McSherry

With Honorable Mention of

James Milton Lotz

HONORARY DEGREES.

CONFERRED AT COMMENCEMENT 1914.

Doctor of Divinity.

Rev. Philip M. Bickle, Ph.D.....Gettysburg, Pa.

Rev. L. L. Uhl, Ph.D.....Cambridge, Mass.

Rev. John T. HuddleWashington, D. C.

Doctor of Laws.

Prof. Carl G. SchulzSt. Paul, Minn.

McCluney Radcliffe, M.D.....Philadelphia, Pa.

Doctor of Literature.

Prof. Charles H. Huber.....Gettysburg, Pa.

Doctor of Science.

Prof. Wm. J. Gies, Ph.D.....New York, N. Y.

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Announcement of Courses for 1916-17

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Founded in 1832

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Congress July 16, 1904

CALENDAR FOR 1915-1916-1917

Session days are indicated by bold-face type.

1915

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	1	2	3	4	..	..	..	..	..	1	2	..	1	2	3	4	5	6	..	..	..	1	2	3	4
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
26	27	28	29	30	..	..	24	25	26	27	28	29	30	28	29	30	..	..	..	..	26	27	28	29	30	31	..
..	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

1916

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	..	1	..	..	1	2	3	4	5	..	..	..	1	2	3	4	..	..	..	..	..	..	1
2	3	4	5	6	7	8	6	7	8	9	10	11	12	5	6	7	8	9	10	11	2	3	4	5	6	7	8
9	10	11	12	13	14	15	13	14	15	16	17	18	19	12	13	14	15	16	17	18	9	10	11	12	13	14	15
16	17	18	19	20	21	22	20	21	22	23	24	25	26	19	20	21	22	23	24	25	16	17	18	19	20	21	22
23	24	25	26	27	28	29	27	28	29	..	..	..	..	26	27	28	29	30	31	..	23	24	25	26	27	28	29
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	..	..	..	..	..	..

May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	3	4	5	6	..	..	..	..	1	2	3	..	..	..	..	..	1	..	..	1	2	3	4	5	
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
28	29	30	31	...	...	...	25	26	27	28	29	30	..	23	24	25	26	27	28	29	27	28	29	30	31	...	...
														30	31												

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
24	25	26	27	28	29	30	29	30	31	..	..	..	..	26	27	28	29	30	..	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..

1917.

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	3	4	5	6	..	..	..	..	1	2	3	..	..	..	1	2	3	4	1	2	3	4	5	6	7
7	8	9	10	11	12	13	4	5	6	7	8	9	10	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	13	14	15	16	17	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	18	19	20	21	22	23	24	22	23	24	25	26	27	28
28	29	30	31	..	..	..	25	26	27	28	..	..	..	25	26	27	28	29	30	31	29	30	..	..	..	..	..

May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	1	2	3	4	5	..	..	..	..	1	2	1	2	3	4	5	6	7	..	..	1	2	3	4		
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
27	28	29	30	31	..	..	24	25	26	27	28	29	30	29	30	31	..	..	..	..	26	27	28	29	30	31	..

COLLEGE CALENDAR—1915-1916-1917

1915.

September 13, 14. Monday and Tuesday, Entrance Examinations.
 September 15.... Wednesday, 11 A. M., College Year begins.
 September 15.... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 25.... Thanksgiving Day. Holiday.
 December 17..... Friday, Noon. Christmas Recess begins.
 December 28..... Tuesday, 1.30 P. M., Mid-Winter Meeting of Board
 of Trustees in Harrisburg.

1916.

January 4..... Tuesday, 8 A. M., Christmas Recess ends.
 January 31 to } Monday to Saturday, Examinations closing First
 February 5..... } Semester.
 February 5..... Saturday, Noon, First Semester ends and Second
 Semester begins.
 April 20..... Thursday, Noon, Easter Recess begins.
 April 26..... Wednesday, 8 A. M., Easter Recess ends.
 April 7..... Friday, Founders' Day.
 May 16..... Tuesday, Latin Examination for Hassler Prize.
 May 22-26..... Monday to Friday, Senior Final Examinations.
 May 30 to } Tuesday to Monday, General Final Examinations.
 June 5..... }
 June 4..... Sunday, 10.45 A. M., Baccalaureate Sermon.
 June 4..... Sunday, 7 P. M., Discourse before Y. M. C. A.
 June 5..... Monday, 2 P. M., Junior Oratorical Contest for
 Reddig Prize, in Brua Chapel.
 June 5..... Monday, 8 P. M., Concert by Combined Musical
 Clubs in Brua Chapel.
 June 5, 6..... Monday and Tuesday, Entrance Examinations.
 June 6..... Tuesday, 9 A. M., Annual Meeting of Board of
 Trustees in Gettysburg.
 June 6..... Tuesday, 10 A. M., Senior Class Day Exercises.
 June 6..... Tuesday, 3 P. M., Alumni Class Reunions.
 June 6..... Tuesday, 4 P. M., Baseball Game on Nixon Field.
 June 6..... Tuesday, 8 P. M., President's Reception.
 June 7..... Wednesday, 10 A. M., Commencement Exercises.
 June 7..... Wednesday, Noon, Alumni Collation and Annual
 Meeting of Alumni Association.

Summer Vacation.

August 29..... Tuesday, 8 A. M., Course in Surveying begins.
 September 18, 19 Monday and Tuesday, Entrance Examinations.
 September 20.... Wednesday, 11 A. M., College Year begins.
 September 20.... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 30.... Thanksgiving Day. Holiday.
 December 20.... Wednesday, Noon, Christmas Recess begins.
 December 28.... Thursday, 1.30 P. M., Mid-Winter Meeting of Board
 of Trustees in Harrisburg.

1917.

January 3..... Wednesday, Noon, Christmas Recess ends.
 January 29 to } Monday to Saturday, Examinations closing First
 February 3..... } Semester.
 February 3..... Saturday, Noon, First Semester ends and Second
 Semester begins.
 April 4..... Wednesday, Noon, Easter Recess begins.
 April 11..... Wednesday, 8 A. M. Easter Recess ends.
 June 13..... Wednesday, Commencement.

HISTORICAL

The Charter of Pennsylvania College was approved April 7, 1832. The opening paragraphs are as follows:

"WHEREAS, the literary and scientific institution in Gettysburg, Adams county, in this Commonwealth, known by the name of Gettysburg Gymnasium, is resorted to by a large number of young men from different portions of this State, and elsewhere, and promises to exert a salutary influence in advancing the cause of liberal education, particularly among the German portion of our fellow citizens; therefore, .

"SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the Gettysburg Gymnasium be, and hereby is erected into a College, for the education of youth in the learned languages, the arts, sciences and useful literature.

"SECTION 2. And be it further enacted by the authority aforesaid, That the style and title of said College shall be 'Pennsylvania College of Gettysburg' and that it shall be under the management, direction and government of all the subscribers to the funds of said institution, by whose private contributions the said funds have been raised and its present edifice purchased, to wit: John B. McPherson, Thomas C. Miller, Thomas J. Cooper, Samuel Fahnestock, Samuel S. Schmucker, Ernest L. Hazelius, David F. Schaeffer, John G. Morris, Benjamin Kurtz, William Heim, Charles P. Krauth, Frederick D. Schaeffer, J. George Schmucker, J. F. Heyer, Jacob Martin, Abraham Reck, William Ernst, Jacob Medtard, Lewis Eichelberger, Michael Meyerheffer, Jonathan Ruthrauff, Jacob Crigler, John F. Macfarlane, Robert Godloe

Harper, John Herbst, and their successors, to be elected as hereinafter mentioned."

In SECTION 4 we read: "And at elections either for patrons, or trustees, or teachers, or other officers, and in the reception of pupils, no person shall be rejected on account of his conscientious persuasion in matters of religion, provided he shall demean himself in a sober manner, and conform to the rules and regulations of the College."

Two unique features in the establishment of colleges appear in the foundation of this College. First, the College in a large measure grew out of the necessity of properly preparing men for the Theological Seminary, established in 1826 at Gettysburg. This purpose has never lessened, and to-day the institution regards this as an important feature of its work and offers special opportunities to young men preparing themselves for theological studies. Pennsylvania College in its beginnings, its history, and its purpose is closely identified with the Lutheran Church.

The other feature is thus stated in the charter:

"In addition to the customary professorships in other colleges, there shall be in this institution a German professorship, the incumbent of which shall, in addition to such other duties as may be assigned him by the board, instruct such young men as may resort to the institution for the purpose of becoming qualified to be teachers of those primary schools, in which according to the Act passed last session, both German and English are to be taught."

While for a number of years there has been no demand for the teaching of German in elementary schools, the College has given prominence to instruction in the German language and literature and has made a specialty of preparation for the teaching profession. Thus in the foundation of the College the demands of the times were carefully considered, and ever since the aim has been to meet the special educational needs of our people.

Among the founders of the College special mention should be made of S. S. Schmucker, D.D., Professor in the Theological Seminary at Gettysburg, who was the directing spirit in changing the Gettysburg Gymnasium into a College and who presided unofficially over the College for two years. In the State Legislature were a number of friends of the College, prominent among them being Thaddeus Stevens, the father of the public school system of Pennsylvania. Several appropriations were made to the College by the Legislature. This money was spent in the erection of the building known as Pennsylvania Hall.

The College began without endowment, with one small building (now a residence on the south-east corner of Washington and High streets), and a small attendance. But the wholesome enthusiasm of its able instructors, the loyalty and self-sacrifice of its officers, students, and alumni, and the devotion of its friends, have made its history down to the very present one of steady and continuous growth. To-day Pennsylvania College is rated as a college of the highest grade by the United States Bureau of Education and the New York State Board of Regents. Her graduates are admitted to all graduate and professional schools without examination.

Following is a list of the Presidents of the College from its foundation to the present time:

1832-34, Samuel S. Schmucker, D.D., Founder.

1834-50, Charles Philip Krauth, D.D., First President.

1850-68, Henry L. Baugher, D.D., Second President.

1868-84, Milton Valentine, D.D., Third President.

1884-04, Harvey W. McKnight, D.D., LL.D., Fourth President.

1904-10, Samuel G. Hefelbower, Ph.D., D.D., Fifth President.

1910- William A. Granville, Ph.D., LL.D., Sixth President.

LOCATION

Gettysburg is situated in the beautiful rolling area of the red shale belt of Pennsylvania, with its ridges of intrusive rock. A few miles west is the South Mountain ridge of the Blue Mountains. The situation is healthful, and there is a good supply of filtered water. The town is readily reached from all directions by the Philadelphia & Reading and the Western Maryland Railways, which connect at Harrisburg, Pa., and Baltimore, Md., with the great railway systems of Pennsylvania and the South. Washington, Baltimore, Harrisburg, York, Hagerstown, Chambersburg, Carlisle, and other important centers are also connected with Gettysburg by unusually good roads, making it a very important automobile tourist center. The Coast to Coast Lincoln Way passes through Gettysburg.

The historic association of Gettysburg with the Civil War gives the locality great additional interest. The events of the Battle of Gettysburg are recorded in inscriptions on about fourteen hundred monuments and one thousand markers, many of these being of large size and of great artistic merit. The United States Battlefield Commission has made the field accessible by over forty miles of very fine avenues, along which are the markings that show the battle lines. Miles of the rifle pits and other intrenchments have been preserved, as well as scores of lunettes. Here also is the National Cemetery, where Lincoln made his memorable dedicatory speech. Among the thousands of travelers visiting the field are many men of national prominence who often speak to the student body. Such surroundings develop a love of our united country and inspire to better citizenship.

The college buildings were all used as hospitals during and after the Battle of Gettysburg; and the Fiftieth Anniversary of the Battle of Gettysburg Commission had its headquarters on the campus, July 1-4, 1913.

BOARD OF TRUSTEES

Elected.

1873.	HON. GEORGE RYNEAL, JR.....	Martinsburg, W. Va.
1890.	HON. SAMUEL MCC. SWOPE*.....	Gettysburg
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1902.	CHARLES BAUM, M.D., PH.D.....	Philadelphia
1905.	MILTON H. VALENTINE, D.D.....	Philadelphia
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1906.	GEORGE E. NEFF, ESQ.....	York
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1907.	MARTIN H. BUEHLER.....	Baltimore, Md.
1907.	HON. R. WILLIAM BREAM.....	Gettysburg
1907.	FREDERICK H. BLOOMHARDT, M.D.....	Altoona
1907.	ALPHEUS EDWIN WAGNER, D.D.....	Gettysburg
1908.	WILLIAM J. GIES, PH.D., SC.D.....	New York, N. Y.
1908.	WILLIAM L. GLATFELTER.....	Spring Grove
1908.	FRANK E. COLVIN, ESQ.....	Bedford
1908.	JOHN F. DAPP.....	Harrisburg
1908.	GEORGE B. KUNKEL, M.D.....	Harrisburg
1908.	JACOB A. CLUTZ, D.D.....	Gettysburg
1910.	WILLIAM A. GRANVILLE, PH.D., LL.D.	Gettysburg
1910.	CHARLES J. FITE.....	Pittsburgh
1910.	BURTON F. BLOUGH.....	Harrisburg
1912.	CHARLES H. BOYER.....	Chicago, Ill.
1912.	WINSLOW S. PIERCE, ESQ.....	New York, N. Y.
1913.	HON. LUTHER A. BREWER.....	Cedar Rapids, Ia.
1914.	FREDERICK H. KNUBEL, D.D.....	New York, N. Y.
1914.	PERCY D. HOOVER, M.D.....	Waynesboro
1915.	Leslie M. Kauffman, M.D.....	Kauffman's
1915.	Harvey C. Miller.....	Philadelphia

Officers.

JOHN F. DAPP.....	President
HON. SAMUEL MCC. SWOPE.....	Vice President
HENRY C. PICKING.....	Secretary and Treasurer

*Designated as Alumni Trustees, having been elected on nomination by the Alumni Association.

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Executive Committee.

	Term Expires
MILTON H. VALENTINE, D.D., Chairman.....	1920
THOMAS C. BILLHEIMER, D.D.....	1919
HENRY C. PICKING.....	1918
JACOB A. CLUTZ, D.D.....	1917
WILLIAM L. GLATFELTER	1916
JOHN F. DAPP.....	Ex-officio
WILLIAM A. GRANVILLE, PH.D., LL.D.....	Ex-officio

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GEORGE B. KUNKEL, M.D., Chairman
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THE FACULTY

WILLIAM ANTHONY GRANVILLE, PH.D., LL.D.....	3 Campus
President	
REV. PHILIP MELANCHTHON BIKLE, PH.D., D.D.....	145 Lincoln Ave.
Dean and Pearson Professor of the Latin Language and Literature	
EDWARD SWOYER BREIDENBAUGH, SC.D.....	227 Carlisle St.
Ockershausen Professor of Chemistry and Mineralogy	
GEORGE DIEHL STAHLEY, A.M., M.D.....	200 Springs Ave.
Dr. Charles H. Graff Professor of Biology and Hygiene	
HENRY BARBER NIXON, PH.D.....	154 Carlisle St.
Alumni Professor of Mathematics and Astronomy	
REV. CHARLES HENRY HUBER, LITT.D.....	411 Carlisle St.
Headmaster and Professor of Latin in Gettysburg Academy	
KARL JOSEF GRIMM, PH.D.....	228 Carlisle St.
Professor of the German Language and Literature	
REV. CHARLES FINLEY SANDERS, D.D.....	125 Broadway
William Bittinger Professor of Philosophy and Education	
LOUIS ALEXANDER PARSONS, A.M., PH.D.....	263 Springs Ave.
Professor of Physics	
REV. ABDEL ROSS WENTZ, B.D., PH.D.....	88 Seminary
Amanda Rupert Strong Professor of English Bible and Professor of History	
HENRY ROBINSON SHIPHERD, A.M., PH.D.....	27 E. High St.
Graeff Professor of English	
STEPHEN REMINGTON WING, M.E.....	138 Broadway
Professor of Electrical and Mechanical Engineering	
CHESTER ALLEN, C.E.....	143 Springs Ave.
Burton F. Blough Professor of Civil Engineering	
JOHN H. ASHWORTH, PH.D.....	159 Broadway
Professor of Economics and Political Science	
BENJAMIN FRANKLIN SCHAPPELLE, A.M.....	143 Springs Ave.
Acting Professor of the Romance Languages and Literatures	
ALBERT BILLHEIMER, A.M.....	115 Buford Ave.
Acting Franklin Professor of the Greek Language and Literature	
JOHN THOMAS ERWIN, A.M.....	143 Springs Ave.
Acting Professor of Mathematics	
CLYDE BELL STOVER, A.M.....	24 E. Lincoln St.
Assistant Professor of Chemistry	

THE FACULTY

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JAMES ALLEN DICKSON, A.M.....	149	Chambersburg St. Instructor in Chemistry
FRED GALLAGHER TROXELL, A.M.....	146	Chambersburg St. Instructor in Mathematics
PAUL SNYDER CREAGER, A.B.....	248	Baltimore St. Instructor in Physics
SPURGEON MILTON KEENY, A.B.....	129	Washington St. Instructor in English
CARL HEINZ BEHLE, A.B.....	46	Thaddeus Stevens Hall Assistant in Modern Languages
GEORGE LLOYD REINERT, B.S.....	143	Springs Ave. Assistant in Engineering
CHARLES PAUL CESSNA, A.B.....	233	Washington St. Assistant in Physics
HENRY WOLF BIKLE, A.M., LL.B.....		Philadelphia Lecturer on Constitutional Law
EDWARD ALSWORTH ROSS, PH.D.		Madison, Wis. Stuckenberg Lecturer on Sociology
GROVER CLEVELAND KNIPPLE, A.M.....	49	W. Middle St. Instructor in English and Greek in Gettysburg Academy
ERLE KERPER DIEHL, A.B.....	42	Thaddeus Stevens Hall Instructor in Mathematics in Gettysburg Academy
LLOYD CONOVER KEEFAUVER, A.B.	16	Thaddeus Stevens Hall Instructor in German and History in Gettysburg Academy

ADDITIONAL OFFICERS AND EMPLOYEES.

EDWARD SWOYER BREIDENBAUGH, SC.D.....	227	Carlisle St. Curator of Museum
KARL JOSEF GRIMM, PH.D.....	228	Carlisle St. Librarian
REV. ABDEL ROSS WENTZ, B.D., PH.D.....	88	Seminary Chaplain and College Historian
REV. SAMUEL FRANK SNYDER, A.M.....	233	Washington St. Assistant to the President
HENRY C. PICKING, A.M.....		Office, Gettysburg National Bank Treasurer
CLYDE B. STOVER, A.M.....	24	E. Lincoln St. Registrar and Secretary of the Faculty

MISS SALLIE P. KRAUTH	3	Baltimore St.
Assistant Librarian		
MISS MARY HAY HIMES, A.M.....	130	Carlisle St.
Preceptress in Thaddeus Stevens Hall		
MISS RACHEL GRANVILLE	3	Campus
Secretary to the President		
ROBERT JACOB WOLF, A.B.....	40	Seminary
College Y. M. C. A. Secretary		
JOHN REIGLE EMBICK		Observatory
Assistant Curator of Museum		
HARRY J. O'BRIEN.....	128	Washington St.
Physical Director and Athletic Coach		
IRA PLANK		Gettysburg
Baseball Coach		
ORDEAN ROCKEY		Room 211 P.
Proctor in Pennsylvania Hall		
WILLIAM MERVIN GROVE		Room 331 S.
Proctor in South College		
ANDREW EARL RUDISILL		Room 260 C.
Proctor in Cottage Hall		
JOHN SUPPLEE TOME		Room 124 P.
Custodian of Reading Room		
JOHN B. HAMILTON.....	128	Washington St.
Superintendent of Buildings and Grounds		
JOHN C. HAMILTON	205	Buford Ave.
Engineer and Watchman		
IVAN P. STONER	26	Carlisle St.
Fireman and Watchman		
MRS. MARY D. MENCHEY.....	3	W. Breckenridge St.
Janitress		
MRS. CARRIE PITTENTURF.....	16	Carlisle St.
Janitress		
S. FRANKLIN WETZEL	48	Stevens St.
Janitor in Gettysburg Academy		
MRS. S. FRANKLIN WETZEL	48	Stevens St.
Matron in Gettysburg Academy		
JOSEPH CARVER.....	4	Campus
Janitor		
MERVE CARVER	4	Campus
Janitor		

COMMITTEES OF THE FACULTY.

Class Advisers.

PROFESSOR STAHLEY, Senior Class
 PROFESSOR SANDERS, Junior Class
 PROFESSOR NIXON, Sophomore Class
 PROFESSOR WENTZ, Freshman Class

Entrance.

BIKLE, NIXON, GRIMM.

Library.

GRIMM, GRANVILLE.

Bulletin.

WENTZ, PARSONS, ASHWORTH, HUBER,
 GRANVILLE, Ex-officio.

Hour Schedule.

BREIDENBAUGH, GRIMM.

Students' Publications.

SHIPHERD, GRIMM, BIKLE.

Supervision of Finance of Students' Publications.

BIKLE, BREIDENBAUGH, SANDERS.

College Discipline.

BIKLE, STAHLEY, WENTZ, SANDERS, ASHWORTH.

Lectures.

BIKLE, WENTZ.

Advanced Degrees.

GRIMM, BIKLE, STAHLEY.

Representative on Athletic Council.

BILLHEIMER.

Supervision of Social Functions.

ALLEN, BIKLE.

ATHLETIC COUNCIL.*Active Members.*

ALBERT BILLHEIMER, '06, Faculty Representative, Chairman.

JOHN F. DAPP, ex-'89, Board Representative.

JAMES A. DICKSON, '05, Alumni Representative.

ARTHUR E. RICE, '04, Alumni Representative, Treasurer.

MARTIN HOWARD BUEHLER, '16, Student Representative, Secretary.

CLARENCE VICTOR HOAR, '16, Ex-officio, President of the College Athletic Association.

Advisory Members.

SAMUEL F. SNYDER, '09, Graduate Athletic Manager.

HARRY J. O'BRIEN, Athletic Coach.

STUDENT COUNCIL 1914-1915.

E. LLOYD ROTHFUSS, '16, President.

RAYMOND A. CARLSON, '17, Vice President.

LUTHER A. GOTWALD, '18, Corresponding Secretary.

JOHN McCULLOUGH, '18, Recording Secretary.

JOHN G. SNYDER, '19, Treasurer.

JOHN E. SPANGLER, '16.

PAUL A. WEIDLEY, '16.

JOSHUA G. SWARTZ, '16.

FRANK B. WILLIAMS, '17.

HENRY E. STARR, '17.

ADMISSION

Applicants for admission are required to present evidence of a good moral character. Applicants from other schools must present certificates of good standing and regular dismissal from the institutions which they have left. No distinctions are made as to sex, except that only male students are admitted to the college dormitories. Women students may secure first-class accommodations in the town with good families and at very reasonable rates by writing to the Registrar.

METHODS OF ADMISSION.

Entrance examinations are held on the Monday and Tuesday preceding the opening of the college year and on the Monday and Tuesday of Commencement Week. The method of admission is either by examinations or by certificates from approved secondary and high schools or from private instructors. Such certificates should state the amount of work done and the time spent on each subject, together with the grades received. Blank admission certificates may be obtained from the Registrar on request. These certificates should be filled out and returned to the Registrar as early as possible before the opening of the college year. The Entrance Committee of the Faculty passes on all applications for admission.

Each applicant for admission should call on the Registrar before or at the opening of College, pay the Registration Fee of \$5.00, be informed as to the action of the Entrance Committee, receive registration blanks, and be instructed in the manner of filling them out. He should arrange his course of study under the guidance of his Group Adviser. He should also submit his schedule of studies, properly endorsed by the Group Adviser, to the Registrar within one week from the opening of College.

REQUIREMENTS FOR ADMISSION.

The scholarship requirement for admission to the Freshman Class is thorough preparation in fifteen units of work in an approved secondary school. A unit is the amount of work represented by five recitations a week for a school year of not less than eight months; i.e., not less than 160 recitations on prepared work or equivalent laboratory work.

PREScribed SUBJECTS FOR ADMISSION.

Of these fifteen units required for admission, the following *five and a half* are required of all candidates:

English	3 units
Mathematics	
A. Algebra	1½ units
B. Plane Geometry	1 unit

ELECTIVE SUBJECTS FOR ADMISSION.

To make up the total of fifteen units the candidate for admission may offer any of the following (under the conditions stated in connection with each Group of College studies, pages 25-28) :

Greek.

- | | |
|---|----------|
| A. Grammar and four books of Xenophon..... | 2 units. |
| B. Composition, three books of Homer, and sight translation | 1 unit. |

Latin.

- | | |
|---|----------|
| A. Grammar and four books of Caesar | 2 units. |
| B. Composition and six books of Cicero..... | 1 unit. |
| C. Six books of Vergil | 1 unit. |

German.

- | | |
|-----------------|----------|
| Two years | 2 units. |
|-----------------|----------|

French.

- | | |
|-----------------|----------|
| Two years | 2 units. |
|-----------------|----------|

Spanish.

- | | |
|-----------------|----------|
| Two years | 2 units. |
|-----------------|----------|

Mathematics.

C. Advanced Algebra	$\frac{1}{2}$ unit.
D. Solid Geometry	$\frac{1}{2}$ unit.
E. Plane Trigonometry	$\frac{1}{2}$ unit.

Mechanical Drawing.

One year	$\frac{1}{2}$ or 1 unit.
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History.

United States	1 unit.
England	1 unit.
Ancient	1 unit.
Medieval	1 unit.

Geography, Political and Physical 1 unit.**Chemistry.**

One year with laboratory work.....	1 unit.
One year without laboratory work.....	$\frac{1}{2}$ unit.

Physics.

One year with laboratory work.....	1 unit.
One year without laboratory work	$\frac{1}{2}$ unit.

Botany.

One year with laboratory work	1 unit.
One year without laboratory work.....	$\frac{1}{2}$ unit.

Zoölogy.

One year with laboratory work.....	1 unit.
One year without laboratory work.....	$\frac{1}{2}$ unit.

Note.—Those offering college work for entrance will substitute other subjects during the college year. In special cases other subjects may be substituted for a portion of the above-named entrance subjects.

DEFICIENCY IN ADMISSION.

To receive the full advantages of a college course a student must have a thorough entrance preparation. Those who are insufficiently prepared for the class they enter do not generally make satisfactory progress in their work. Fifteen units of entrance work are required for unconditional admission to the College; but in some cases a temporary deficiency of slight amount will be permitted. In such cases the entrance deficiency must be satisfied by enrollment in the Gettysburg Academy or under an approved tutor. Such enrollment must take place at the time of registration in the College. Work thus

done in satisfying an entrance deficiency does not give College credit, but does count as part of the current work of the student in estimating the number of hours in which he may be enrolled.

ADMISSION TO ADVANCED STANDING.

A candidate for advanced standing must satisfy the entrance requirements and in addition must submit evidence of the satisfactory character of the work for which advanced credit is asked. Blanks for such applications are furnished by the Registrar on request.

No one is admitted to the College after the beginning of the Senior year except by special action of the Faculty.

PARTIAL COURSE STUDENTS.

Persons so situated that they are not able to or do not wish to pursue a course of study leading to a degree are admitted as partial course students in such subjects as examination may show they are prepared to pursue with advantage. Such students are required to offer for entrance not less than eleven units of preparatory work, and their weekly schedule must include not less than twenty-eight semester hours.

SPECIAL STUDENTS.

Students of the Theological Seminary are admitted to one or more courses in the College.

The Faculty may also admit to one or more courses such applicants as have special qualifications for the subjects they desire to pursue.

ADMISSION SUBJECTS IN DETAIL

ENGLISH.

In English the study of the following books, recommended by the National Conference on Uniform Entrance Requirements. This is required for 1916-1917.

A. Reasonable familiarity with the substance of the work:

The following are preferred, though any of the alternatives specified in the Uniform Entrance Requirements for 1915-1919 are accepted:

Shakespeare's "Merchant of Venice" and "Julius Caesar"; Addison's "Sir Roger de Coverley Papers"; Goldsmith's "Deserted Village"; Scott's "Ivanhoe" and "Lady of the Lake"; George Eliot's "Silas Marner"; Irving's "Sketch Book"; Tennyson's "Gareth and Lynette," "Lancelot and Elaine," and "Passing of Arthur"; Ruskin's "Sesame and Lilies."

B. More careful and specific study:

Shakespeare's "Macbeth"; Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso"; Washington's "Farewell Address"; Webster's "First Bunker Hill Oration"; Carlyle's "Essay on Burns."

The examination will be in two parts,—one of questions on grammar, rhetoric, and composition, the other of questions on the literature specified above.

In the first part, candidates will be asked specific questions and given particular exercises in word-choice, sentence structure, the principles of paragraphing, and other such matters as a student seeking college standing should be proficient in. The examination in literature will require reasonable familiarity with the books and the authors mentioned under "A" above (or those accepted in substitution for them); and a fairly thorough knowledge and appreciation of the books and the authors named under "B" above.

No candidate will be accepted in English whose work is seriously defective in spelling, punctuation, grammar, choice of words, sentence structure, paragraphing, or other essentials of good usage.

MATHEMATICS.

A. Algebra. The four fundamental operations for rational algebraic expressions; factoring, determination of the highest common factor and least common multiple by factoring; fractions, involution, evolution, radicals, and imaginary quantities. Equations of the first and second degree, ratio and proportion, progressions; binomial theorem for positive integral exponents, and permutations and combinations limited to simple cases.

B. Plane Geometry. Five Books. Demonstration of theorems and constructions, including rectilinear figures, circles, proportional lines, and similar figures; comparison and measurement of surfaces, including triangles, regular polygons, and circles; maxima and minima; originals.

C, D, E. The entrance requirements in Advanced Algebra, Solid Geometry, and Plane Trigonometry are similar to the work done in these subjects in the College courses as given on page 82. For advanced standing in Solid Geometry and Trigonometry, candidates must present note-books and other evidence of thorough work.

POLITICAL AND PHYSICAL GEOGRAPHY.

The requirement in Political Geography may be met by the study of any good text-book. The requirement in Physical Geography may be met by the study of any text-book equivalent to Gilbert and Brigham's "Introduction to Physical Geography," Davis' "Elementary Physical Geography," or Tarr's "New Physical Geography."

GREEK.

A1. Grammar. The candidate must have familiarized himself with the essentials of grammar, namely, the inflections of substantives and verbs; the syntax of cases, and the moods and tenses of the verb; the simple rules for the composition and derivation of words; the structure of sentences, with particular regard to conditional and relative sentences, indirect discourse, and final clauses.

A2. Xenophon. The first four books of "Anabasis."

B1. Prose Composition. The requirements in prose composition involve the ability to translate into idiomatic Greek, continuous narrative based on Xenophon's "Anabasis," Book II, and other Attic prose of similar difficulty. Due regard must be paid to the principles and practice of accentuation.

B2. Homer. The first three books of the "Iliad" (omitting II, 494-end) or of the "Odyssey," including the Homeric forms, constructions, and prosody.

B3. Sight Translation. One of the most important assets which a student can bring to the study of college Greek is the ability to read easily at sight passages of equal difficulty with the "Anabasis" or the "Hellenica." For this purpose he should memorize as a working vocabulary the principal words in Xenophon and the three books of Homer.

(See page 63 for Beginners' Greek in College).

LATIN.

A1. Grammar. Allen and Greenough's preferred.

A2. Caesar's "Gallic War," Books I-IV.

B1. Prose Composition, including the translation of English passages on Caesar and Cicero.

B2. Six Orations of Cicero, including at least two against Catiline, the one for Archias, and the one for the Manilian Law.

C. *Vergil's "Aeneid,"* Books I-VI, and so much prosody as relates to Latin versification in general and the dactylic hexameter in particular.

Equivalents will be accepted for work done in Sallust or Ovid or other authors of equal rank.

GERMAN.

The requirements in German presuppose a systematic course extending over at least two years of school work.

The candidate is expected to be able to pronounce German clearly and distinctly. He must possess an accurate knowledge of the rudiments of grammar, and should have acquired an elementary German vocabulary. He should be able to translate easy prose and poetry, and to put into German simple English sentences taken from the language of every-day life and easy selections from English narrative prose.

FRENCH.

The requirements in French correspond to those in German, and include the ability to pronounce French accurately, to read easy French prose, to put into French simple English sentences taken from the language of every-day life and easy selections from English narrative prose, and a good knowledge of the rudiments of French grammar.

SPANISH.

The requirements in Spanish correspond to those in French.

MECHANICAL DRAWING.

Drawings, accompanied by a certificate from the instructor, must be submitted. One unit credit will be allowed in cases where not less than two hundred hours of work has been devoted to the subject.

HISTORY.

A. *United States.* Montgomery's "Leading Facts of American History," or its equivalent.

B. *English.* Walker's "Essentials of English History," or its equivalent.

C. *Ancient.* Myers' "Ancient History," or its equivalent.

D. *Medieval and Modern.* Myers' "Medieval and Modern History," or its equivalent.

CHEMISTRY.

The candidate should have such knowledge of the general principles of the science and the properties of the more important elements as may be obtained by a careful study of a text-book of the scope of Remsen's "Introduction to the Study of Chemistry, Briefer Course."

The pupil should have performed in the laboratory experiments in number and general character the equivalent of those given in Remsen's "Introduction." The record of this work must be contained in a note-book describing in the pupil's own words the materials used, the apparatus employed (with drawings), the changes occurring, and the resulting products, with the conclusions properly drawn from the phenomena observed.

This note-book must be presented bearing the following endorsement by the instructor: "This note-book is a true and original record of experiments actually performed by — in — school during the year —."

PHYSICS.

A good high school course, using any standard high school text, covering the simple principles of Physics, descriptive and experimental rather than mathematical, including not less than three class periods and two hours of laboratory work a week for one year.

BOTANY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to text-book and laboratory study of this subject with the aid of Bergen's "Essentials of Botany" or some other standard book of equal merit. Drawings and note-books are required.

ZOÖLOGY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to this subject. Davison's "Practical Zoölogy" or any other standard book of equal grade will be accepted. Note-books and drawings must accompany the certificate.

THE GROUP SYSTEM OF COURSES

The courses of study in the College are arranged in ten groups. These groups are designed to be of equal value in the mental training of the student. This arrangement accomplishes several purposes. It enables the student to select those subjects which are of special value in preparation for subsequent professional study or business. In the first six groups it provides for a general training and broad culture which requires the student not to specialize but to concentrate a fair proportion of his time and energy on one or two related subjects. This gives a fuller training of the mental powers than results from a more diffused and often aimless selection of studies in a too largely elective system.

In addition to these groups of non-professional courses, groups have been established in Civil, Municipal, Mechanical, and Electrical Engineering.

Each group of studies is described in detail on pages 29-59.

VALUE OF A SEMESTER HOUR OF COLLEGE WORK.

A semester hour of college work consists of the equivalent of one weekly exercise for one semester, either a recitation, a lecture, a laboratory period of two and a half or three hours, or an assignment of equivalent work on which an examination is held. A weekly exercise for one semester consisting of one lecture hour in connection with two laboratory hours counts as one semester hour.

GROUP I. GREEK AND LATIN.

Entrance requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; Latin A, B, C, 4 units; Greek A, B, 3 units, or German, 3 units*; and $2\frac{1}{2}$ elective units.

*Two units of German are accepted as meeting the language requirement provided 15 units, including Latin A, B, C, is offered for entrance.

This group is based largely on the long established classical curriculum, not, however, requiring so large an amount of the ancient languages as formerly, thus giving an opportunity for study in other subjects.

This group is specially recommended for those intending to enter the ministerial or legal professions, and also provides the necessary foundation for advanced language study.

This group leads to the degree of Bachelor of Arts.

GROUP II. LATIN AND MODERN LANGUAGES.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; Latin A, B, C, 4 units; 2 units of German or French or Spanish or Greek; History, 1 unit; and $2\frac{1}{2}$ elective units.

In this group the emphasis is laid on the modern languages and provides for those who wish to make a special study of them.

This group is well adapted to preparation for legal or literary pursuits and for teaching.

This group leads to the degree of Bachelor of Arts.

GROUP III. HISTORY AND POLITICAL SCIENCE.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; Latin A, B, C, 4 units; 2 units of German or French or Spanish or Greek; History, 2 units; and $1\frac{1}{2}$ elective units.

In this group emphasis is laid on the historical studies and on Political Science and Economics.

This group is intended to lay the foundations for professional legal studies, and to prepare for the teaching of these subjects.

This group leads to the degree of Bachelor of Arts.

GROUP IV. CHEMISTRY OR PHYSICS.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; 2 units in each of two of the following: Latin, German, French, Spanish; and $5\frac{1}{2}$ elective units of which not more than 2 may be in Science.

In this group emphasis is laid on Chemistry and Physics with the requirement that the student shall give special attention to one of these subjects. Sufficient time is devoted to the modern languages to give the student a good command of them.

This group is recommended to those who intend to enter on scientific professional studies, or to engage in manufacturing or commercial pursuits, or to teach Chemistry or Physics.

This group leads to the degree of Bachelor of Science.

GROUP V. BIOLOGY, CHEMISTRY, AND PHYSICS.

Pre-Medical Group.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; 2 units in each of two of the following: Latin, German, French, Spanish; and $5\frac{1}{2}$ elective units of which not more than 2 may be in Science.

In this group the student obtains a good foundation in each of the great divisions of scientific study; and it is recommended to those who intend to teach general Science, and also to those who have in view the study of medicine. Two years' work in the above branches meets the science requirements for entrance into the best medical schools.

This group leads to the degree of Bachelor of Science.

GROUP VI. COMMERCE AND FINANCE.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; History, 2 units; 2 units in each of two of the following: Latin, German, French, Spanish; and sufficient electives to make a total of 15 units.

This group is arranged to meet the needs of those who intend to enter business, law, or the public service.

This group leads to the degree of Bachelor of Science.

- GROUP VII. CIVIL ENGINEERING.**
GROUP VIII. MUNICIPAL ENGINEERING.
GROUP IX. MECHANICAL ENGINEERING.
GROUP X. ELECTRICAL ENGINEERING.

Entrance Requirements for Groups VII-X: English, 3 units; Mathematics A, B, D, and E, $3\frac{1}{2}$ units; 2 units of Latin or German or French or Spanish; Science, not more than 2 units; and sufficient electives to make a total of 15 units.

These groups are offered for those who intend either to enter the engineering profession or to engage in other pursuits in which a knowledge of engineering is useful.

These groups lead to the degree of Bachelor of Science.

OUTLINE OF GROUPS

GROUP I.—GREEK AND LATIN.

Group Adviser: Professor Biklé.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; Latin A, B, C, 4 units; Greek A, B, 3 units, or German, 3 units; and 2½ elective units.

This Group is especially recommended for its cultural value and as a preliminary training course for those intending to enter the ministerial, legal, medical, journalistic, or teaching profession, and also provides a foundation for advanced language study.

This Group leads to the degree of **Bachelor of Arts**.

The following Schedule of Studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek*: Xenophon (Hellenica) Ly-					
sias,	1*	3	2*	3	63
or Greek*: First Year Greek	A*	3	A*	3	63
Latin: Livy, Horace (Odes), Cicero					
(De Senectute)	1, 2	3	2, 3	3	65
English: English Composition	A	3	A	3	60
History: Political History of Modern					
Europe	1	2	1	2	70
English Bible: General Introduction	1	1	1	1	69
Mathematics: Solid Geometry, Plane					
and Spherical Trigonometry	1, 2	3	2	3	82
Chemistry: General Chemistry	1	3	1	3	80
Total Semester Hours		18		18	

*Students offering German for admission will take Greek A, and those offering Greek for admission will take Greek 1 and 2.

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek* : Plato (Apology and Crito), Homer (Odyssey),	3*	3	4*	3	63
or Greek* : Second Year Greek	B*	3	B*	3	63
Latin : Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	65
German* : Elementary German,	B*	3	B*	3	61
or German* : Composition, Conversation, Modern Prose	I*	3	I*	3	61
English : English and American Literature	I	2	I	2	60
Philosophy : Psychology, Introduction to Philosophy	I	2	2	2	72
Mathematics : Advanced Algebra, Plane Analytic Geometry	3, 4	3	4	3	83
Total Semester Hours		16		16	

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek† : Xenophon (Hellenica), Lysias	I†	3	2†	3	63
English : Shakespeare	2	2	2	2	60
German : Composition, Conversation, Modern Prose,	I	3	I	3	61
or German : German Classics,	2	3	2	3	62
or French : Elementary French	A	3	A	3	67
Economics : Principles of Economic Theory	I	3	I	3	75
Christian Evidences :	I	2			70
Philosophy : Logic	3	2			72
Philosophy : Ethics			5	2	72
Physics : Elements of Physics	A	4	A	4	84
or Physics : General Physics (Mechanics, Sound, and Heat),	I	3	I	3	84
and Physics‡ : Laboratory Physics	2‡	1	2‡	1	85
Electives :		3		5	
Total Semester Hours		16-19		16-19	

*Students offering German for admission will take Greek B and German 1, and those offering Greek for admission will take Greek 3 and 4 and German B, in the Sophomore Year.

†Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

‡ In some cases Physics 1 may be taken without Physics 2 (if approved by the Group Adviser and Instructor).

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Greek*: Plato (Apology and Crito), Homer (Odyssey)	3*	3	4*	3	63
Philosophy: History of Philosophy	6	3	6	3	73
Philosophy: Theism			8	2	73
Electives:	9-15		7-13		
It is suggested that these be chosen from the following:					
Latin: Terence, Latin Literature, Roman Law	9, 10	2	10, 11	2	66
Greek: Demosthenes, Aristotle	8	2	9	2	64
Modern Language:	2 or 3		2 or 3		62-68
English: Public Speaking	4	2	4	2	61
History: English History, United States History	2	3	3	3	70, 71
History: The German Empire and its Present Organization, History of Civilization	4	3	5	3	71
Mathematics: Astronomy	9	2	9	2	84
Education: History of Education, Pedagogy	1	3	2	3	74
Education: School Organization and Method of Teaching	3	2			74
Comparative Philology:	1	1	1	1	68
Biology: Personal and Public Hygiene	9	1	9	1	79
Physics: Electricity and Light	3, 4	4	3, 4	4	85
Total Semester Hours	15-18		15-18		

*Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

GROUP II.—LATIN AND MODERN LANGUAGES.**Group Adviser:** Professor Grimm.

Entrance Requirements: English, 3 units; Mathematics A, B, 2½ units; Latin A, B, C, 4 units; 2 units of German or French or Spanish or Greek; History, 1 unit; and 2½ elective units.

This Group is recommended for its cultural value and is further well adapted to preparation for legal or literary pursuits and for teaching. The emphasis is laid on the Modern Languages, and provision is made for those who wish to make a special study of them.

This Group leads to the degree of **Bachelor of Arts.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the Course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	65
German*: Composition, Conversation, Modern Prose	1*	3	1*	3	61
or German*: Elementary German,	A*	3	A*	3	61
or French*: Elementary French,	A*	3	A*	3	67
or French: Grammar, Composition, Modern Prose	1*	3	1*	2	67
English: English Composition	A	3	A	3	60
History: Political History of Modern Europe	1	2	1	2	70
English Bible: General Introduction	1	1	1	1	69
Mathematics: Solid Geometry, Plane and Spherical Trigonometry	1, 2	3	2	3	82
Biology: General Biology, Zoölogy	1, 2	3	2, 3	3	77
or Chemistry: General Chemistry,	1	3	1	3	80
or Physics: Elements of Physics,	A	4	A	4	84
or Physics: General Physics (Mechanics, Sound, and Heat),	1	3	1	3	84
and Physics†: Laboratory Physics	2†	1	2†	1	85
Total Semester Hours	18 or 19		18 or 19		

*Students offering Greek for admission will take German A in Freshman Year (if electing German); those offering German for admission will take German 1 (or French).

†In some cases, if approved by the Instructor and the Group Adviser, Physics 1 may be taken without Physics 2.

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	65, 66
German*: German Classics, or German: Composition, Conversation, Modern Prose	2*	3	2*	3	62
French: Grammar, Composition, Modern Prose,	1	3	1	3	61
or French: Elementary French	1	3	1	3	67
English: English and American Literature	A	3	A	3	67
Philosophy: Psychology, Introduction to Philosophy	1	2	1	2	60
Mathematics: Advanced Algebra, Plane Analytic Geometry	1	2	2	2	72
	3, 4	3	4	3	82
Total Semester Hours	16		16		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Epochs of German Literature,	4	3	4	3	62
or German: German Classics	2	3	2	3	62
French: French Classics,	2	3	2	3	67
or French: Grammar, Composition, Modern Prose	1	3	1	3	67
English: Shakespeare	2	2	2	2	60
English: Nineteenth Century Prose	3	2	3	2	60
Economics: Principles of Economic Theory	1	3	1	3	75
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	72
Electives:	1-4		1-4		
Total Semester Hours	16-19		16-19		

*Students offering Greek for admission will take German A in the Freshman Year, and students offering German for admission will take German 1.

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Languages:		6+		6+	62-68
Other Electives:		9+		9+	
Those looking toward teaching are advised to elect:					
Education: History of Education, Pedagogy	1	3	2	3	74
Education: School Organization and Method of Teaching	3	2			74
Philosophy: Logic	2	2			72
Other electives will be recommended by the Group Adviser for those specializing in other lines.					
Total Semester Hours	15-18		15-18		

GROUP III.—HISTORY AND POLITICAL SCIENCE.**Group Adviser:** Professor Wentz.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; Latin A, B, C, 4 units; 2 units of German or French or Spanish or Greek; History, 2 units; and 1½ elective units.

In this Group emphasis is laid on the historical studies and on Political Science and Economics. The Group is intended to lay the foundations for professional legal studies and to prepare for the teaching of these subjects.

This Group leads to the degree of **Bachelor of Arts**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	65
German*: Composition, Conversation, Modern Prose,	I*	3	I*	3	61
or German*: Elementary German,	A*	3	A*	3	61
or French: Elementary French	A	3	A	3	67
English: English Composition	A	3	A	3	60
History: Political History of Modern Europe	I	2	I	2	70
English Bible: General Introduction	I	1	I	1	69
Mathematics: Solid Geometry, Plane and Spherical Trigonometry	1, 2	3	2	3	82
Biology: General Biology, Zoölogy,	1, 2	3	2, 3	3	77
or Chemistry: General Chemistry,	I	3	I	3	80
or Physics: Elements of Physics,	A	4	A	4	84
or Physics: General Physics, (Mechanics, Sound, and Heat),	I	3	I	3	84
and Physics†: Laboratory Physics	2†	2	2†	1	85
Total Semester Hours	18 or 19		18 or 19		

*Students offering Greek for admission will take German A in the Freshman Year (if electing German); those offering German for admission will take German 1 (or French).

†In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Cicero (De Amicitia or De Natura Decorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	65, 66
German: German Classics	2	3	2	3	62
or German: Composition, Conversation, Modern Prose,	1	3	1	3	61
or French: Grammar, Composition, Modern Prose,	1	3	1	3	67
or French: Elementary French	A	3	A	3	67
English: English and American Literature	1	2	1	2	60
Political Science: American Government, Political Parties	1	3	2	3	76
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	72
Mathematics: Advanced Algebra, Plane Analytic Geometry	3, 4	3	4	3	83
Total Semester Hours		16		16	

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	60
Economics: Principles of Economic Theory	1	3	1	3	75
Economics†: Labor Problems, Business Organization	7†	3	8†	3	76
or Political Science*: International Law, Constitutional Law	3*	3	4*	3	77
History†: English History, United States History,	2†	3	3†	3	70, 71
or History*: The German Empire and its Present Organization, History of Civilization	4*	3	5*	3	71
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	72
Electives:		1-2½		1-2½	72
Total Semester Hours		15-18		15-18	

*Given 1916-1917 and alternate years.

†Given 1917-1918 and alternate years.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics †: Labor Problems, Business Organization	7†	3	8†	3	76
or Political Science *: International Law, Constitutional Law	3*	3	3*	3	77
History *: History of Civilization, The German Empire and its Present Organization,	4*	3	5*	3	71
or History †: English History, United States History	2†	3	3†	3	70, 71
Philosophy †: Sociology	4†	2			72
Electives:	7-10		9-12		
It is suggested that the electives in the Junior and Senior Years be taken from the following:					
Latin: Roman Law	11	1			66
Economics *: Money and Banking, Business Law	2*	3	5*	3	75
Economics: Public Finance	5	1	5	1	75
Philosophy: Advanced Logic	9	1			73
Modern Language:	1 or 1½		1 or 1½		62-68
<hr/>					
Total Semester Hours	15-18		15-18		

*Given 1916-1917 and alternate years.

†Given 1917-1918 and alternate years.

GROUP IV.—CHEMISTRY AND PHYSICS.**Group Advisers:**

Chemistry Section: Professor Breidenbaugh.

Physics Section: Professor Parsons.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; 2 units of each of two of the following: Latin, German, French, Spanish; Science not more than 2 units; and sufficient electives to make a total of 15 units.

In this Group the emphasis is laid on Chemistry and Physics with the requirement that special attention be given to one of these subjects in the Junior and Senior Years. The Group is intended to prepare for teaching these subjects, or for professional studies in these lines or for advanced work in research laboratories in the field of Chemistry and Physics (both scientific and technical), or for manufacturing and commercial pursuits.

Either the Chemistry or Physics section should be selected on entering the Group; however the choice between Chemistry and Physics as the principal subject is not required to be made until the beginning of the Junior Year.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose,	I	3	I	3	61
or German*: Elementary German	A*	3	A*	3	61
Latin: Livy, Horace (Odes), Cicero (De Senectute),	1, 2	3	2, 3	3	65
or French*: Grammar, Composition, Modern Prose,	I*	3	I*	3	67
or French*: Elementary French	A*	3	A*	3	67
English: English Composition	A	3	A	3	60
History: Political History of Modern Europe	I	2	I	2	70
English Bible: General Introduction	I	1	I	1	69
Mathematics: Solid Geometry, Plane and Spherical Trigonometry	1, 2	3	2	3	82
Chemistry: General Chemistry	I	3	I	3	80
Total Semester Hours		18		18	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: German Classics,	2	3	2	3	62
or German: Composition, Conversation, Modern Prose,	I	3	I	3	61
or French*: French Classics,	2*	3	2*	3	67
or French*: Grammar, Composition, Modern Prose	I*	3	I*	3	67
English: English and American Literature	I	2	I	2	60
Philosophy: Psychology, Introduction to Philosophy	I	2	2	2	72
Mathematics: Advanced Algebra, Plane Analytic Geometry	3, 4	3	4	3	82
Chemistry: Qualitative Analysis	2	3	2	3	80
Physics: General Physics, (Mechanics, Sound, and Heat)	I	3	I	3	84
Physics: Laboratory Physics	2	1	2	1	85
Total Semester Hours		18		18	

*Students offering German for admission will take German 1 in the Freshman Year; those offering Latin or French without German for admission will take German A. Those offering French for admission will take French 1 (if electing French) others electing French will take French A.

Junior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	60
Economics: Principles of Economic Theory	1	3	1	3	75
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	72
Chemistry: Quantitative Analysis	3	3	3	3	80
Physics: General Physics, Electricity and Magnetism, and Light)	3	3	3	3	85
Physics: Physical Measurements	4	2	4	1	85
Electives:		2-5		2-5	
Total Semester Hours	16-19		16-19		

Senior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Scientific German	3	3	3	3	62
Chemistry: Organic Chemistry	4	4	4	4	81
Chemistry: Special Quantitative Methods	7	3-5	7	3-5	81
Electives:		3-9		3-9	
Students intending to engage in Chemical work or in teaching Chemistry are advised to elect from the following list:					
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2	81, 82
Geology and Mineralogy: Mineralogy	3	2	3	2	82
French: Scientific French	3	2	3	2	67
German:		2 or 3		2 or 3	62
Spanish: Elementary Spanish		1-3		1-3	68
Total Semester Hours	15-18		15-18		

Junior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	60
Economics: Principles of Economic Theory	1	3	1	3	75
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	72
Mathematics: Differential and Integral Calculus	5	3	5	3	82
Physics: General Physics, (Electricity and Magnetism, and Light)	3	3	3	3	85
Physics: Physical Measurements	4	1-2	4	1-2	85
Electives:		2-5		2-5	
Total Semester Hours	16-19		16-19		

Senior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Scientific German	3	3	3	3	62
Physics: Physics Seminary	11	1	11	1	86
Physics: Electrical Measurements	6	2			85
Physics: Advanced Laboratory Physics	10	2	10*	1-2*	86
Physics: Mechanics, or Physics: Recent Advances in Physics,			5	3	85
or Engineering: Elements of Electrical Engineering			7	1	85
Electives:		7-11		7-11	89
To those intending to pursue advanced work in Physics it is suggested that electives be chosen from the following:					
Modern Languages:	2 or 3		2 or 3		62-68
Mathematics: Differential Equations	6	3	6	3	83
Mathematics: Solid Analytic Geometry	7	3	7	3	83
Physics: Mathematical Physics	8 or 9	2	8 or 9	2	86
Mathematics: Astronomy	9	2	9	2	84
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2	82
Biology: General Biology and Zoölogy	1, 2	3	2, 3	3	77
Total Semester Hours	15-18		15-18		

*Physics 10 may be omitted during the second semester if Engineering 7 is elected.

GROUP V.—BIOLOGY, CHEMISTRY, AND PHYSICS.**Group Adviser:** Professor Stahley.

Entrance Requirements: English, 3 units; Mathematics A, B, 2½ units; 2 units of each of two of the following: Latin, German, French, Spanish; Science not more than 2 units; and sufficient electives to make a total of 15 units.

This Group offers advantages in supplying the essentials of a modern general culture course.

It provides the prospective teacher of general science with an adequate knowledge of the three fundamental sciences, and by adding certain studies, as electives in the Senior year, in the Department of Philosophy, the requirements of the Pennsylvania School Code are fully met.

As a Pre-Medical course, this Group satisfies the demands of the best medical schools and of the Pennsylvania State law for medical student registration. If the student wishes to limit his college preparation to two years provision is made to meet this desire.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German*: Composition, Conversation, Modern Prose, or German*: Elementary German	I*	3	I*	3	61
	A*	3	A*	3	61
French*: Grammar, Composition, Modern Prose, or French*: Elementary French, or Latin: Livy, Horace (Odes), Cicero (De Senectute)	I*	3	I*	3	67
	A*	3	A*	3	67
	I, 2	3	I, 2	3	65
English: English Composition	A	3	A	3	60
History: Political History of Modern Europe	I	2	I	2	70
English Bible: General Introduction	I	1	I	1	69
Mathematics: Solid Geometry, Plane and Spherical Trigonometry	I, 2	3	2	3	82
Chemistry: General Chemistry	I	3	I	3	80
Total Semester Hours		18		18	

*Students offering German for admission will take German 1 in the Freshman Year; those offering Latin or French without German for admission will take German A. Those offering French for admission will take French 1 (if electing French); others electing French will take French A.

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: German Classics,	2	3	2	3	62
or German: Composition, Con-	1	3	1	3	61
versation, Modern Prose,	2	3	2	3	67
or French: French Classics,	1	3	1	3	67
or French: Grammar, Composi-	A	3	A	3	67
tion, Modern Prose,	1	2	1	2	60
or French: Elementary French	1	2	2	2	72
English: English and American	3, 4	3	4	3	83
Literature	2	3	2	3	80
Philosophy: Psychology, Intro-	1	3	1	3	84
duction to Philosophy	2	1	2	1	85
Mathematics: Advanced Alge-					
bra, Plane and Analytic Ge-					
ometry					
Chemistry: Qualitative Analysis					
Physics: General Physics, (Me-					
chanics, Sound, and Heat),					
Physics: Laboratory Physics					
Total Semester Hours		17		17	

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	60
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	72
Biology: General Biology, Zo-	1, 2	3	2, 3	3	77
ölogy	7	2	7	2	78
Biology: Botany	3	3	3	3	80
Chemistry: Quantitative Analysis					
Physics: General Physics (Elec-	3	3	3	3	85
tricity and Magnetism, and	4	1	4	1	85
Light)					
Physics: Physical Measure-					
ments					
Total Semester Hours		16		16	

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Scientific German	3	3	3	3	62
Economics: Principles of Economics	1	3	1	3	75
Biology: Human Anatomy and Physiology, Mammalian Histology, Embryology	4	3	5, 6	3	78
Chemistry: Organic Chemistry	4	4	4	4	80
Electives: Those looking forward to teaching are advised to elect:	2-5		2-5		
Philosophy: Logic	3	2			72
Education: History of Education, Pedagogy	1	3	2	3	74
Education: School Organization and Method of Teaching	3	2			74
Biology: Personal and Public Hygiene	9	1	9	1	79
Those looking forward to Medicine are advised to elect:					
Political Science: Theory of the State, American Government and Politics	1	2	2	2	76
French:		2		2	67
or German:		2		2	62
Biology: Personal and Public Hygiene	9	1	9	1	79
Geology: Dynamical and Historical Geology	1	2	2	2	81, 82
Physics: Recent Advances in Physics			7	2	86
In addition to the above lists, the following are suggested for general culture:					
History: English History, United States History,	2	3	3	3	70, 71
or History: History of Civilization, The German Empire and its Present Organization	4	3	5	3	71
Total Semester Hours	15-18		15-18		

GROUP VI.—COMMERCE AND FINANCE.

Group Adviser: Professor Ashworth.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; History, 2 units; 2 units of each of two of the following: Latin, German, French, Spanish; and sufficient electives to make a total of 15 units.

This Group is designed primarily for students who intend to enter business, law or the public service. Especial attention is given to the general principles underlying all lines of business, and to the relation of business to government and politics.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German* : Composition, Conversation, Modern Prose,	I*	3	I*	3	61
or German* : Elementary German	A*	3	A*	3	61
French* : Grammar, Composition, Modern Prose,	I*	3	I*	3	67
or French* : Elementary French	A*	3	A*	3	67
English : English Composition	A	3	A	3	60
History : Political History of Modern Europe	I	2	I	2	70
English Bible : General Introduction	I	1	I	1	69
Mathematics : Solid Geometry, Plane and Spherical Trigonometry	I, 2	3	2	3	82
Biology : General Biology, Zoölogy,	I, 2	3	2, 3	3	77
or Chemistry : General Chemistry,	I	3	I	3	80
or Physics : General Physics, (Mechanics, Sound, and Heat),	I	3	I	3	84
and Physics† :					
Laboratory Physics	2†	1	2†	1	85
or Physics :	A	4	A	4	84
Total Semester Hours	18 or 19		18 or 19		

*Students offering Greek for admission will take German A in the Freshman Year (if electing German); those offering German for admission will take German 1 (or French).

†In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: German Classics,	2	3	2	3	61
or German: Composition, Conversa-					
tion, Modern Prose,	1	3	1	3	61
or French: French Classics,	2	3	2	3	67
or French: Grammar, Composition,					
Modern Prose	1	3	1	3	67
English: English and American					
Literature	1	2	1	2	60
Philosophy: Psychology, Introduc-					
tion to Philosophy	1	2	2	2	72
Economics: Principles of Economics	1	3	1	3	75
Political Science: American Govern-					
ment, Political Parties	1	3	2	3	76
Mathematics: Advanced Algebra,					
Plane and Analytical Geometry	3, 4	3	4	3	83
Total Semester Hours		16		16	

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: German Classics,	2	3	2	3	61
or German: Epochs of German					
Literature,	4	3	4	3	62
or French: Scientific French,	3	3	3	3	67
or Spanish: Elementary Spanish	1	3	1	3	68
English: Shakespeare	2	2	2	2	60
History†: English History, United					
States History,	2†	3	3†	3	70, 71
or History*: The German Empire,					
History of Civilization	4*	3	5*	3	71
Economics*: Money and Banking,					
Business Law,	2*	3	5*	3	75
or Economics†: Public Finance, Ac-					
counting	3†	3	6†	3	75
Economics†: Labor Problems, Busi-					
ness Organization	7†	3	8†	3	76
or Political Science*: International					
Law, Constitutional Law	3*	3	4*	3	77
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	72
Total Semester Hours		16		16	

*Given 1916-1917 and alternate years.

†Given 1917-1918 and alternate years.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics* : Money and Banking, Business Law,	2*	3	5*	3	75
or Economics† : Public Finance, Ac- counting	3†	3	6†	3	75
Economics† : Labor Problems, Busi- ness Organization,	7†	3	8†	3	76
or Political Science* : International Law, Constitutional Law	3*	3	4*	3	75
Philosophy† : Sociology	4†	2			72
Electives:		7-10		9-12	
Total Semester Hours		15-18		15-18	

*Given 1916-1917 and alternate years.

†Given 1917-1918 and alternate years.

GROUP VII.—CIVIL ENGINEERING.

Group Adviser: Professor Allen.

Entrance Requirements: English, 3 units; Mathematics A, B, D, and E, $3\frac{1}{2}$ units; 2 units of Latin or German or French or Spanish; Science, not more than 2 units; and sufficient electives to make a total of 15 units.

This Group affords suitable training not only for students who expect to enter this profession, but for those who wish to prepare themselves for callings more or less closely related to engineering. During the first two years emphasis is laid on the underlying natural sciences and on mathematics, while during the last two years technical subjects are introduced. Some liberal arts studies are required, and extreme specialization in instruction is avoided.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose,	I	3	I	3	61
or Latin: Livy, Horace,	1, 2	3	2, 3	3	65
or French: Grammar, Composition, Modern Prose,	I	3	I	3	67
or Spanish: Elementary Course	I	3	I	3	68
English: English Composition,	A	3	A	3	60
Mathematics: Spherical Trigonometry, Advanced Algebra, Plane and Solid Analytic Geometry	2, 3, 4	4	2, 4	4	82, 83
Chemistry: General Chemistry	I	3	I	3	80
Physics: General Physics, (Mechanics, Sound, and Heat)	I	3	I	3	84
Physics: Laboratory Physics	2	I	2	I	85
Engineering: Mechanical Drawing	I	I	I	I	88
Total Semester Hours		18		18	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	60
Mathematics: Differential and Integral Calculus	5	4	5	4	83
Chemistry: Qualitative Analysis	2	3			80
Physics: General Physics, (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	85
Physics: Physical Measurements	4	1	4	2	85
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	88
Engineering: Mechanics	3	3	3	3	88
Engineering: Metallurgy of Steel			4	1	89
Total Semester Hours		19		17	

Summer Field Surveying.

Civil Engineering 11.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. Credit of two semester hours. (See page 90).

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	70
English Bible: General Introduction	1	1	1	1	69
Philosophy: Psychology	1	2			72
Mathematics: Astronomy	9	2			84
Geology and Mineralogy: Mineralogy	3	2			82
Physics: Electrical Measurements	6	2			85
Engineering: Hydraulics			5	3	89
Engineering: Materials Testing	6	3			89
Engineering: Elements of Electrical Engineering			7	4	89
Civil Engineering: Mechanics (B)	18	2	18	2	91
Civil Engineering: Surveying (B), Office Work	12	2			90
Civil Engineering: Railroads (A)			16	4	90
Total Semester Hours		18		16	

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. Credit of two semester hours. (See page 90).

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	1	3	1	3	75
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	72
English: English Novel and Short Story	3	2	3	2	60
Geology and Mineralogy: Dynamical Geology	1	2			81
Civil Engineering: Surveying (B), Office Work	14	2			90
Civil Engineering: Railroads (B)			17	2	91
Civil Engineering: Structural Design	19	3	19	3	91
Civil Engineering: Structural Drafting			20	2	91
Civil Engineering: Contracts and Specifications			21	1	91
Civil Engineering: Masonry	22	3			92
Civil Engineering: Highways			23	2	92
Civil Engineering: Seminary	26	1	26	1	92
Total Semester Hours		18		18	

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

GROUP VIII.—MUNICIPAL (SANITARY) ENGINEERING.**Group Adviser:** Professor Allen.

Entrance Requirements: English, 3 units; Mathematics A, B, D, E, $3\frac{1}{2}$ units; 2 units of Latin or German or French or Spanish; Science, not more than 2 units; and sufficient electives to make a total of 15 units.

This Group is offered for students who wish to fit themselves for dealing with the sanitary problems of the modern city, from the engineer's viewpoint. The course of study for the first three years is identical with that of Group VII.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose	I	3	I	3	61
or Latin: Livy, Horace,	I, 2	3	2, 3	3	65
or French: Grammar, Composition, Modern Prose.	I	3	I	3	67
or Spanish: Elementary Course	I	3	I	3	68
English: English Composition,	A	3	A	3	60
Mathematics: Spherical Trigonometry, Advanced Algebra, Plane and Solid Analytic Geometry	2, 3, 4	4	2, 4	4	82, 83
Chemistry: General Chemistry	I	3	I	3	80
Physics: General Physics, (Mechanics, Sound, and Heat)	I	3	I	3	84
Physics: Laboratory Physics	2	1	2	1	85
Engineering: Mechanical Drawing	I	1	I	1	88
Total Semester Hours		18		18	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	60
Mathematics: Differential and Integral Calculus	5	4	5	4	83
Chemistry: Qualitative Analysis	2	3			80
Physics: General Physics, (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	85
Physics: Physical Measurements	4	1	4	2	85
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	88
Engineering: Mechanics	3	3	3	3	88
Engineering: Metallurgy of Steel			4	1	89
Total Semester Hours	19		17		

Summer Field Surveying.

Civil Engineering 11.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. Credit of two semester hours. (See page 90).

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	70
English Bible: General Introduction	1	1	1	1	69
Philosophy: Psychology	1	2			72
Mathematics: Astronomy	9	2			83
Geology and Mineralogy: Mineralogy	3	2			81
Physics: Electrical Measurements	6	2			85
Engineering: Hydraulics			5	3	89
Engineering: Materials Testing	6	3			89
Engineering: Elements of Electrical Engineering			7	4	89
Civil Engineering: Mechanics (B)	18	2	18	2	91
Civil Engineering: Surveying (B), Office Work	12	2			90
Civil Engineering: Railroads (A)			16	4	90
Total Semester Hours	18		16		

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. Credit of two semester hours. (See page 90).

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Economics*: Principles of Economics	1	3	1	3	75
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	72
English: English Novel and Short Story	3	2	3	2	60
Geology and Mineralogy: Dynamical Geology	1	2			82
Biology: Sanitation and Bacteriology			8	2	79
Chemistry: Water and Sewage	5	2			81
Civil Engineering: Surveying (B), Office Work	14	2			90
Civil Engineering: Structural Design	19	3			91
Civil Engineering: Contracts and Specifications			21	1	91
Civil Engineering: Masonry	22	3			92
Civil Engineering: Highways			23	2	92
Civil Engineering: Water Supply Engineering			24	2	91
Civil Engineering: Sewerage			25	2	92
Civil Engineering: Seminary	26	1	26	1	92
Total Semester Hours		20		17	

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

GROUP IX.—MECHANICAL ENGINEERING.

Group Adviser: Professor Wing.

Entrance Requirements: English, 3 units; Mathematics A, B, D, E, $3\frac{1}{2}$ units; 2 units of Latin or German or French or Spanish; Science, not more than 2 units; and sufficient electives to make a total of 15 units.

This Group is designed for students who wish to prepare themselves for work along engineering and manufacturing lines. The Group combines the study of the basic principles of engineering and, to a limited extent, their application to practical problems, with some work in the liberal arts. The instruction is of a broad and fundamental nature, and will be found useful to students who are desirous of fitting themselves for future promotion to executive positions in manufacturing and industrial concerns.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose	I	3	I	3	61
or Latin, Livy, Horace,	1, 2	3	2, 3	3	65
or French: Grammar, Composition, Modern Prose	I	3	I	3	67
or Spanish: Elementary Course	I	3	I	3	68
English: English Composition,	A	3	A	3	60
Mathematics: Advanced Algebra, Plane and Solid Analytic Geometry	3, 4	4	4	4	83
Chemistry: General Chemistry	I	3	I	3	80
Physics: General Physics, (Mechanics, Sound, and Heat)	I	3	I	3	84
Physics: Laboratory Physics	2	I	2	I	85
Engineering: Mechanical Drawing	I	I	I	I	88
Total Semester Hours	18		18		

Sophomore Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
English: English and American Literature	1	2	1	2	60
Mathematics: Differential and Integral Calculus	5	4	5	4	83
Chemistry: Qualitative Analysis	2	3			80
Physics: General Physics, (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	85
Physics: Physical Measurements	4	1	4	2	85
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	88
Engineering: Mechanics	3	3	3	3	88
Engineering: Metallurgy of Steel			4	1	89
Total Semester Hours	19		17		

Junior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
History: Political History of Modern Europe	1	2	1	2	70
English Bible: General Introduction	1	1	1	1	69
Philosophy: Psychology	1	2			72
Physics: Electrical Measurements	6	2			85
Engineering: Hydraulics			5	3	89
Engineering: Materials Testing	6	3	6	3	89
Engineering: Elements of Electrical Engineering			7	4	89
Mechanical Engineering: Shop Work	31	2	32	2	92, 93
Mechanical Engineering: Kinematics	33	4			93
Mechanical Engineering: Machine Design, (A)			34	3	93
Mechanical Engineering: Heat Power Engineering, (A)	36	3	36	3	93
Total Semester Hours	19		21		

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	I	3	I	3	75
Christian Evidences:	I	2			70
Philosophy: Ethics			5	2	72
English: English Novel and Short Story	3	2	3	2	60
Mechanical Engineering: Machine Design, (B)	35	3	35	3	93
Mechanical Engineering: Heat Power Engineering, (B)	37	2	37	2	93
Mechanical Engineering: Power Plant Design			38	4	94
Mechanical Engineering: Mechanical Engineering Laboratory	39	I	39	I	94
Civil Engineering: Structural Design	19	3			91
Civil Engineering: Surveying (C)	15	I			90
Mechanical Engineering: Semi-nary	40	I	40	I	94
Total Semester Hours		18		18	

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

GROUP X.—ELECTRICAL ENGINEERING.**Group Adviser:** Professor Wing.

Entrance Requirements: English, 3 units; Mathematics A, B, D, E, $3\frac{1}{2}$ units; 2 units of Latin or German or French or Spanish; Science, not more than 2 units; and sufficient electives to make a total of 15 units.

This Group is designed for students who wish to specialize in the study of Applied Electricity. The course of study for this Group for the first three years is identical with that of Group IX. Ample opportunity is given for specialization in the Senior Year.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose	I	3	I	3	61
or Latin, Livy, Horace,	1, 2	3	2, 3	3	65
or French: Grammar, Composition, Modern Prose,	I	3	I	3	67
or Spanish: Elementary Course	I	3	I	3	68
English: English Composition,	A	3	A	3	60
Mathematics: Advanced Algebra, Plane and Solid Analytic Geometry	3, 4	4	4	4	83
Chemistry: General Chemistry	I	3	I	3	80
Physics: General Physics, (Mechanics, Sound, and Heat)	I	3	I	3	84
Physics: Laboratory Physics	2	I	2	I	85
Engineering: Mechanical Drawing	I	I	I	I	88
Total Semester Hours	18		18		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	60
Mathematics: Differential and Integral Calculus	5	4	5	4	83
Chemistry: Qualitative Analysis	2	3			80
Physics: General Physics, (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	85
Physics: Physical Measurements	4	1	4	2	85
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	88
Engineering: Mechanics	3	3	3	3	88
Engineering: Metallurgy of Steel			4	1	89
Total Semester Hours	19		17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	70
English Bible: General Introduction	1	1	1	1	69
Philosophy: Psychology	1	2			72
Physics: Electrical Measurements	6	2			85
Engineering: Hydraulics			5	3	89
Engineering: Materials Testing	6	2	6	2	89
Engineering: Elements of Electrical Engineering			7	4	89
Mechanical Engineering: Shop Work	31	2	32	2	92, 93
Mechanical Engineering: Kinematics	33	4			93
Mechanical Engineering: Machine Design, (A)			34	3	93
Mechanical Engineering: Heat Power Engineering, (A)	36	3	36	3	93
Total Semester Hours	18		20		

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	I	3	I	3	75
Christian Evidences:	I	2			70
Philosophy: Ethics			5	2	72
English: English Novel and Short Story	3	2	3	2	60
Mechanical Engineering: Mechanical Engineering Laboratory	39	I	39	I	94
Electrical Engineering: Theory of Electrical Machinery	45	3	45	3	94
Electrical Engineering: Characteristics of Electrical Machinery	46	2	46	2	95
Electrical Engineering: Electrical Laboratory	47	3	47	3	95
Electrical Engineering: Generation of Electrical Energy	48	2			95
Electrical Engineering: Seminary	49	I	49	I	95
Total Semester Hours		19		18	

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

COURSES OF INSTRUCTION

ENGLISH.

Professor Shipherd, and Messrs. Keeny and Whiting.

- A. English Composition.**—This course consists of practice in writing exposition, argument, description, and narration, in long and short themes, and in letters; with the parallel study of specimens, and of the principles of rhetoric as they apply to writing. Lectures, recitations, written exercises in the class-room and outside, and personal conferences.

Required course for all Freshmen. Three periods throughout the year. Credit of six semester hours.

- English and American Literature.**—This course consists of a survey of English Literature from "Beowulf" to Kipling, and of the chief American writers; lectures, collateral reading, and written reports.

Required course for all Sophomores. Two periods throughout the year. Credit of four semester hours.

- 2. Shakespeare.**—The first semester, three plays read in class; the second semester, lectures on the poems and the rest of the plays, with collateral reading.

Required course for all Juniors in Groups I-VI. Two periods throughout the year. Credit of four semester hours.

- 3. English Novel and Short Story.**—First two-thirds of the year, a survey of the growth of the novel in structure and content; last third of the year, a study of the principles and structure of the short story. Lectures, collateral reading of representative novels and short stories, class discussions, weekly reports, and personal conferences.

Required course for Juniors in Groups II and VI, and all Seniors in Groups VII-X; open to all other Juniors as an elective course. Two periods throughout the year. Credit of four semester hours.

- 4. Public Speaking and Oral Reading.**—This course consists of practice in prepared and extempore speaking, in oral reading of prose and poetry, and in general platform work.

Elective course open to all qualified students. Two periods throughout the year. Credit of four semester hours.

- 5. Argumentation and Debating.**—A study of the substance and the forms of argumentative discourse, written and spoken; involving the principles of inductive and deductive logic, of sound and fallacious reasoning, of evidence, of the **selection and use of materials**, and of the best forensic and platform practice.

Elective course open to members of class and college debating teams; and to qualified Juniors and Seniors. Two periods throughout the year. Credit of four semester hours.

GERMAN.

Professor Grimm and Mr. Behle.

- German A.**—An elementary course. For students with no preliminary training in German, but with several years' work in other languages. It includes the study of grammar, practice in writing and speaking German, translation of prose and poetry, and the memorizing of simple poems.

Three periods throughout the year. Credit of six semester hours.

- German B.**—A course for beginners similar to German A, but especially designed for students in Group 1. For such students it completes the requirements in German for the degree of Bachelor of Arts. Those, however, who have the ministry in view, are advised to take also German 1 or German 2.

Three periods throughout the year. Credit of six semester hours.

- German 1.**—For students who have presented German for admission; also for those who have completed German A. It may likewise be taken by students who have passed in German B. This course comprises a brief review of grammar, a careful study of syntax combined with oral and written prose composition, exercises in conversation, and readings, both with previous preparation and at sight, from standard writers of modern German prose. Some time is also given to the reciting of ballads and lyrics. Outside reading may be assigned.

Three periods throughout the year. Credit of six semester hours.

German 2.—For students who have passed in German 1, also open to those students who have attained a grade of not less than C in German B. This course is devoted to the study of selections from classical authors, chiefly from Lessing, Goethe, and Schiller, with some attention to the laws and forms of poetics. Private reading is required.

Three periods throughout the year. Credit of six semester hours.

German 3.—For candidates for the degree of Bachelor of Science, also open to others who have completed German 1. This course consists of the cursory reading in class of German essays of a general scientific character, together with private assignments on some special subject in Science.

Two or three periods throughout the year. Credit of four or six semester hours.

German 4.—For those students who have chosen German as their principal subject in Group II; open also to others who satisfy the instructor of their fitness to take it. The work in this course consists in the study of the main epochs of the German language and literature, on the basis of readings from representative poets and masters of German style.

Two or three periods throughout the year. Credit of four or six semester hours.

German 5.—An elective course on German literature in the period of the Reformation, with special reference to Luther and the church hymns. Open to advanced students in German.

Hours arranged to suit the convenience of instructor and students.

German 6.—An elective course devoted to the discussion of grammatical topics, advanced composition, and the critical reading of selected texts. Special attention is given to the needs of those students who wish to teach German in the public or secondary schools.

Hours arranged to suit the convenience of instructor and students.

German 7.—A course aiming to widen the student's vocabulary of modern German by means of extracts from newspapers, periodicals, and other suitable reading. It also presents to the student a general view of the German land and people. Attention is given to the needs of those looking forward to a business career. As far as practicable, the course will be conducted in German.

Hours to be arranged.

Deutscher Verein.—Opportunity for more extended German conversation and discussions referring to German life, literature, and culture may be offered to advanced students in a voluntary German Club, meeting fortnightly from November to April inclusive.

GREEK.

Professor Billheimer.

Preparatory Greek.

A. First Year Greek.—An elementary course for students who have not presented Greek for admission. The course will cover White's "First Greek Book," and Book I of Xenophon's "Anabasis."

Three periods throughout the year. Credit of six semester hours.

B. Second Year Greek.—A course for those who have taken Beginners' Greek. Books II-IV of Xenophon's "Anabasis" and selections from Xenophon's "Cyropaedia" will be read.

Three periods throughout the year. Credit of six semester hours.

College Greek.

1. Xenophon.—Selections from Books I-IV of the "Hellenica," with a thorough review of forms and the essentials of grammar. Greek Prose Composition.

Freshman course. Three periods, first semester. Credit of three semester hours.

2. Lysias.—Selected Orations, special attention being given to syntax. Greek Prose Composition.

Freshman course. Three periods, second semester. Credit of three semester hours.

3. Plato.—"Apology," and "Crito." Interpretation of the text and advanced work in syntax.

Sophomore course. Three periods, first semester. Credit of three semester hours.

4. Homer.—Books IX-XIII of the "Odyssey." Attention will be given to the meter, to Ionic forms, and to the special features of syntax.

Sophomore course. Three periods, second semester. Credit of three semester hours.

5. **Euripides.**—This course will give a practical introduction to Greek metrics, and will include the history of Greek Tragedy and of the Greek Theatre. [1915-16].

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

6. **Greek History.**—A survey of the history of Greece from the earliest times to the battle of Chaeronea. The study of the history of this period will be accompanied by an examination of the early archaeological remains and by the reading of selections from the literary and epigraphical sources. Reports on special subjects will be made by members of the class. [1915-16].

Junior and Senior course. Two periods, second semester. Credit of two semester hours.

7. **Aristotle.**—"The Athenian Constitution." In addition to the interpretation of the text, topics in Athenian constitutional history and political institutions will be assigned for report.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

8. **New Testament Study.**—This course embraces a study of New Testament Greek. Some book of the New Testament chosen by the class is read in the original. The study of Biblical Greek has its approach from the classic side, but special attention is given to the distinctive peculiarities of Hellenistic Greek as a later and less artificial dialect of the elaborate and polished language of orators and philosophers. The student is familiarized with the vocabulary of the New Testament. Etymology and syntax are systematically studied.

Junior and Senior course. Two periods, second semester. Credit of two semester hours.

To provide for applicants for Group I who cannot offer the entrance requirements in Greek, but can offer three entrance units in Modern Languages, provision is made for beginning Greek in College. Such students have Preparatory Greek Courses A and B during Freshman and Sophomore years, and receive College credit. During Junior and Senior years they have Greek 1, 2, 3, 4.

A student who is a regular member of Group II will be allowed to elect courses in Greek, including Courses A and B, after the Sophomore year, and will be given College credit for them.

LATIN.

Professor Biklé.

Allen and Greenough's "Latin Grammar" and Harper's "Latin Lexicon" are recommended. Of the smaller dictionaries the student is advised to get the "Elementary Latin Dictionary," by Charlton T. Lewis.

1. **Livy.**—Selections from Book I, and the Hannibalian War in Books XXI and XXII. Special attention is given the syntax and Livy's peculiarities of style. Collateral reading on the Punic Wars, and lectures on Rome and Carthage.

Freshman course. Three periods during the first semester up to the Christmas vacation. Credit of two semester hours.

2. **Horace.**—Selections from the "Odes," including a critical interpretation with special attention to the Horatian meters and the mythological and historical allusions of the text. Berens' "Hand-Book of Mythology" is recommended. Collateral reading on Horace as a lyric poet.

Freshman course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

3. **Cicero.**—The "De Senectute" will be read, with thorough drill in syntax, special attention being given to the mode uses of the Latin Subjunctive.

Freshman course. Three periods from the last of March to the close of the academic year. Credit of two semester hours.

Note. During part of the Freshman year there will be, in connection with the reading of the Latin text, drill in Latin Prose Composition, embracing a rapid review of Latin syntax, with oral and written practice in the principles involved.

4. **Cicero.**—The "De Amicitia" or the "De Natura Deorum." Rigid drill in syntax will be continued, with training in reading the Latin text with expression. Collateral reading of the life and times of Cicero. Informal lectures on Cicero's philosophical views.

Sophomore course. Three periods a week during the first semester up to the Christmas vacation. Credit of two semester hours.

5. **Horace.**—"Satires," and the "De Arte Poetica." After the study of some selected satires the "Ars Poetica" is read, and each student is required to prepare a written analysis of the poem. There is a review of the dactylic hexameter versification.

Sophomore course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

6. **Tacitus.**—The "Agricola", or selections from the "Annals." Along with the translation of the text there will be a study of the times in relation to the literature of this period, and special attention will be given to the characteristics of the Silver Age Latinity.

Sophomore course. Three periods from the last of March to the close of the year. Credit of two semester hours.

7. **Quintilian.**—Tenth Book of the "Institutes." The student is required to make a close study of the terms used by Quintilian in literary criticism, and to make a summary and classification of the Greek and Roman authors.

Junior course. Two periods during the first semester to the Christmas vacation. With course 8, credit of four semester hours.

8. **Juvenal.**—Selected Satires. With full explanations of the text and collateral reading on the private and social life of the Romans of the Empire. Followed by a short course in Roman Antiquities.

Junior course. Two periods from the beginning of January to the close of the college year. With course 7, credit of four semester hours.

9. **Terence or Plautus.**—The "Andria" of Terence or the "Captivi" of Plautus. The dramatis personae are assigned to special members of the class and the parts are rendered both in Latin and English. Informal lectures on the Roman theatre; also on the origin and development of the Latin drama, and the value of the Roman comedy to the philologist and the student of Roman life.

Senior course. Two periods for ten weeks. With courses 10 or 11, and 12 or 13, credit of four semester hours.

10. **Latin Literature.**—A course of lectures embracing a general survey of the whole field, and aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, with special attention to the writers of the Golden and Silver Ages. Or, —

11. **Roman History.**—A course of lectures covering the period from 150 B. C. to 100 A. D.

Senior course. Two periods for eight weeks. With courses 9 and 12, credit of four semester hours.

12. **Roman Law.**—Morey's "Outlines" is the chief text-book. After a careful study of the historical development and content of Roman Law, a paper is required from each member of the class on a subject assigned for special investigation. Or, —

13. Roman Constitutional History.—The subject is pursued with the aid of a text-book.

Senior course. Two periods for seventeen weeks. With courses 9 and 10, or 11, credit of four semester hours.

FRENCH.

Professor Schappelle and Mr. Behle.

French A.—An elementary course for students who have not offered French for admission. For students in Group I, it satisfies the requirements in French for the baccalaureate degree.* This course includes careful drill in pronunciation, the study of the essentials of grammar with constant exercises in turning English into French, and the translation of easy French texts.

Three periods throughout the year. Credit of six semester hours.

French 1.—An intermediate course for students who have offered French for admission, also open to those who have passed in French A. This course comprises the study of grammatical principles, composition, exercises in pronunciation, dictation, and readings from standard writers of modern prose. Outside reading may be assigned.

Three periods throughout the year. Credit of six semester hours.

French 2.—Advanced Course. Open to all students who have completed with credit French 1, or who have done equivalent work. This course is devoted to the study of French classics, with special reference to Corneille, Racine, Molière. Some time is also given, during the second semester, to more difficult representative prose. Private reading is required.

Two or three periods throughout the year. Credit of four or six semester hours. [Omitted 1915-1916].

French 3.—Scientific French. This course consists of the reading of texts and magazine articles dealing with scientific subjects. Subjects for outside reading, dealing with branches of science in which the students expect to specialize, will be assigned.

Two periods throughout the year. Credit of four semester hours. [Omitted 1915-1916].

*Students who have the ministry in view may substitute German 1 or 2

ITALIAN.

Professor Schappelle.

Italian 1.—Elementary course. Open to students who have completed the requirements in French. This course aims to give the student a thorough training in the rudiments of the Italian language and to enable him to read ordinary Italian with ease and accuracy.

Three periods throughout the year. Credit of six semester hours.

Italian 2.—Advanced course. This course consists of a review of grammar together with readings from more difficult modern prose and poetic works.

Two periods throughout the year. Credit of four semester hours. [Omitted 1914-1915].

SPANISH.

Professor Schappelle.

Spanish 1.—Elementary course. Open to students who have completed the requirements in French. This course is intended for those who desire a knowledge of the essentials of the Spanish language, either for literary work or for a business career.

Three periods throughout the year. Credit of six semester hours.

Spanish 2.—Advanced course. This course consists of a review of grammar together with advanced composition. Selections from more difficult modern prose and poetic works, as well as from the classics, including Cervantes, will be read.

Two periods throughout the year. Credit of four semester hours.

COMPARATIVE PHILOLOGY.

Professor Grimm.

1. Linguistic Science.—A course open to advanced students, dealing with the principles of Linguistic Science.

One period throughout the year. Credit of two semester hours.

2. Sanskrit.—Beginners' course in Sanskrit. Open to advanced students. This course includes the study of grammar and the interpretation of an easy text from Lanman's Reader.

Two periods throughout the year. Credit of four semester hours.

ENGLISH BIBLE.

Professor Wentz.

1. **General Introduction to the English Bible.**—This course aims to bring to the student a sympathetic knowledge of the life and thought of the Hebrews as the nation which has most vitally influenced our own religious thought. To do this reference must be made to Biblical history and geography. But the chief object is to acquaint the student with the Bible as the record of the advance and culmination of the highest religious consciousness of the human race. The distinctive forms of thought contained in the Bible from the beginnings of Hebrew history down to the close of the Apostolic Age are studied in succession. The original message of the writers is sought out and translated into the logic of the Occidental mind. This course is of necessity only introductory, but it is intended to show that a knowledge of Biblical thought and literature is an integral part of a liberal education.

Freshman course. One period throughout the year. Credit of two semester hours.

2. **Literary Study of the Bible.**—The Bible is studied as a body of English literature, and the sacred writings are subjected to a morphological analysis. The study of the literary forms is entirely independent of the historical investigation. The distinctive types of literary structure in the Bible as presented by Moulton in his "Modern Reader's Bible" are studied in detail and their permanent literary value is noted. The underlying principle of this study is that a thorough understanding of the outer literary form is an essential guide to an appreciation of the inner matter and spirit.

Sophomore course. One period throughout the year. Credit of two semester hours.

3. **Life of Christ.**—A survey is given of the political, religious, and social conditions in the time of Christ as the background necessary to an understanding of His life and teachings. The events of His life are then studied from the four-fold gospel itself, special attention being given to chronology and harmony. An outline of His teachings, ethical as well as religious, is adduced. The aim is not apologetic but purely historical.

Junior course. One period throughout the year. Credit of two semester hours.

4. **New Testament Study.**—See Greek 9.

CHRISTIAN EVIDENCES.

Professor Wentz.

1. A defensive statement of the Christian religion as the divinely revealed religion of redemption. From a consideration of the historical foundations the essence of Christianity is deduced in brief and thus the method of defense is determined. Evidences external and internal are considered. The miraculous element in the New Testament is vindicated. Special reference is made to those elements in our present intellectual environment which tend to make faith difficult. In conclusion, Christianity is compared with the ethnic religions, and the absolute character and the permanent significance of the Christian verities are maintained.

Junior course. Two periods, first semester. Credit of two semester hours.

HISTORY.

Professor Wentz.

1. **Political History of Modern Europe.**—The essential landmarks of ancient and mediaeval history are recalled and fixed definitely in mind, and a brief introductory survey is given of the civilization of Europe at the end of the Middle Ages. Then beginning with the Protestant Reformation the course of the historical development of modern Europe is traced by a thorough study of the Modern Period, the aim being to develop the general background of historical knowledge and to introduce the student to methods of college historical study.

Freshman course. Two periods throughout the year. Credit of four semester hours.

2. **English History.**—After a rapid introductory survey of the Anglo-Saxon period, the course begins with the Norman conquest and deals with the details of historical development down to the present time. Stress is laid upon such phases of English history as will specially aid the student to understand the modern political development in continental Europe and in the United States. The materials of the study include text-books, lectures, secondary authorities, and sources, with frequent discussions of assigned readings.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Alternates with Course 4. Given 1915-1916 and alternate years.

Prerequisite, Course 1.

- 3. United States History.**—This course comprises a study in the epochs of our national history. An effort is made to discern the social and economic forces that have been operative in the development of the republic, and thus lead to an understanding of the national problems of the present. Much attention is given also to American biography, and biographical essays, sketches of epochal events, and frequent reports on assigned topics are required.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Alternates with Course 5. Given in 1915-1916 and alternate years.

Prerequisite, Course 1.

- 4. The German Empire and its Present Organization.**—This study begins with the changes in the political map of Europe after the Congress of Vienna and traces the gradual nationalization and unification of Germany. It concludes with a detailed study of the present organization of the Empire and an examination of the political, religious, and economic conditions of the present day. The characteristic phenomena are constantly culled from the sources.

Junior and Senior course. Three periods first semester. Credit of three semester hours. Alternates with Course 3. Given in 1914-1915 and alternate years.

Prerequisite, Course 1.

- 5. History of Civilization.**—This course, presupposing a knowledge of the facts and events of history, makes a study of the growth of historical ideas. The forces that have moved men and nations are sought out and the causes which have operated to direct the tendencies of peoples and to develop institutions are set forth. The unity and continuity of history are developed. The course leads first through the history of ancient and mediaeval civilization and then to the study of modern and contemporary civilization. The aim here is to analyze the constructive elements of our own civilization, to lead the student to a thorough understanding of the general trend of modern times, and thus enable him to determine his relation to the world society of to-day.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Alternates with Course 3. Given in 1914-1915 and alternate years.

Prerequisite, Course 1.

PHILOSOPHY.

Professor Sanders.

1. **Psychology.**—A course in general psychology which aims to acquaint the student with the phenomena of mind, the methods of psychological investigation, and the practical bearing of the various mental functions on the problems of ethics, pedagogy, etc.

Sophomore course. Two periods, first semester. Credit of two semester hours.

2. **Introduction to Philosophy.**—The course in general psychology suggests the problems of philosophy. The course in Introduction aims to acquaint the student with the content of philosophy, the origin and development of the various problems, the aim and method of philosophy, the results which have been attained, and its relation to the other departments of human thought.

Sophomore course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

3. **Logic.**—An introductory course in the laws of thought. The evolution of the concept, its development into judgment and inference, the systematic function of classification, the explanatory function of generalization, and the methodology of proof and investigation are studied with a view to securing a foundation for the theory of knowledge and effective scientific method.

Junior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

4. **Sociology.**—A study of the nature of society and its problems. Starting with the psychological factors of sociation, the development of social institutions, the economic and cultural factors of social progress, and the elimination of hindrances, evils are taken up in turn with a view to an understanding of the methods of social improvement.

Junior and Senior course. Two periods, first semester. Credit of two semester hours. Alternates with Education 3. Given in 1915-1916 and alternate years.

Prerequisite, Course 1.

5. **Ethics.**—A study of human conduct. The concept of personality and the idea of self-realization, as forming the background of moral judgment, are wrought into a system

which explains the origin of the moral motives as well as their implication of God and immortality.

Senior course. Two periods, second semester. Credit of two semester hours.

6. History of Philosophy.

A. Ancient and Medieval Period.—This course traces the rise and progress of reflective thought as it appears among the Greeks and culminates in Scholasticism. Special stress is placed upon the Greek thinkers, with a view to acquiring an understanding of the spirit of philosophy.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

B. Modern Period.—This course covers the period from the Renaissance to the present time. Special stress is placed upon the great systems. The student is required to read selections from the great thinkers and report on them, the constant aim being to cultivate the philosophizing attitude, thus furnishing a basis for independent thought as well as an inspiration to do original thinking.

Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3, and 6 A.

7. Philosophy of Religion.—A study of religion as a distinct factor in human development. The aim of the course is to show the nature of religion and to interpret the various forms in which it manifests itself.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

8. Metaphysics.—Beginning with the method of system building, the student is introduced to the meaning of a world-view, the factors which a comprehensive and consistent view must recognize, and the reasons for regarding Theism as the theory which best meets existing requirements.

Senior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, 3, 5, and 6.

9. Advanced Logic.—A study of epistemology investigating the principles of science with a view to understanding their origin, their validity, and their philosophical implications.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 10. Advanced Psychology.**—A study of the problems and methods in modern psychology. The course is adapted to those who intend pursuing advanced studies in the mental sciences. Individual research work is required.

Senior course. Two periods, first semester. Credit of two semester hours.

EDUCATION.

Professor Sanders.

- 1. History of Education.**—A study of the most important movements in the history of education and of the factors and personages instrumental in bringing about the various steps in the long line of progress.

Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

- 2. Pedagogy.**—A study of the science and art of the teaching process. This course regards the problem of education from the viewpoint of the teacher, his problems and responsibilities in relation to the state on the one hand and the pupil on the other, and the principles and methods by means of which these responsibilities may be discharged effectively.

Three periods, second semester. Credit of three semester hours.

Alternates with Course 4. Given 1915-1916 and alternate years.

Prerequisite, Philosophy 1, 2, and 3, and Education 1.

- 3. School Organization and Method of Teaching.**—A study of the practical problems of organization and the application of principles.

Two periods, first semester. Credit of two semester hours. Alternates with Philosophy 4. Given 1916-1917 and alternate years.

Prerequisite, Philosophy 1, 2, and 3.

- 4. Secondary Education.**—A study of the principles and problems of the secondary school. The course is intended for those who are looking forward to High School and Superintendency positions.

Three periods, second semester. Credit of three semester hours.

Alternates with Course 2. Given 1916-1917 and alternate years.

Prerequisite, Courses, Philosophy 1, 2, and 3, and Education 1.

- 5. Educational Psychology.**—This course deals with the psychology of learning, methods of mental measurement,

memory and intelligence tests, treatment of precocity and deficiency, &c.

Two periods, second semester. Credit of two semester hours.

Prerequisite, Philosophy 1 and 3.

Note. The State School Code requires of all teachers who desire the State certificate courses 1, 3, and 5, in Philosophy, and at least six semester hours in Education.

ECONOMICS.

Professor Ashworth.

1. **Principles of Economics.**—After a brief study of the economic history of England and the United States attention is centered on fundamental economic laws and principles and their application to modern economic problems such as the tariff, corporations, transportation, labor problems, and the currency.

Sophomore course for students in Group VI. Junior and Senior course for other students. Three periods throughout the year. Credit of six semester hours.

Prerequisite for all other courses in Economics unless permission is otherwise given by Professor of Economics.

2. **Money and Banking.**—An examination of the theories of money and credit with a history of the monetary and banking systems of the United States. A study is also made of European and Canadian Banking Systems.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given in 1916-1917 and alternate years.

3. **Public Finance.**—A study of the principles of public finance with special reference to the United States. The various tax systems, government debt, and government expenditure are considered.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1917-1918 and alternate years.

4. **Sociology.**—See Philosophy 4.

5. **Business Law.**—This course is designed to give the student a knowledge of the legal rights and obligations arising out of common business transactions. The fundamental laws pertaining to contracts, partnerships, corporations, negotiable instruments, sales, etc., are examined.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1916-1917 and alternate years.

- 6. Accounting.**—This course deals with the methods of accounting in the various kinds of business and for the different types of organizations. The relation of bookkeeping to accounting and the principles of accounting with their practical applications are studied.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1917-1918 and alternate years.

- 7. Labor Problems.**—A study of the relation of the employee to the employer, including such subjects as child and woman labor, the sweating system, poverty, unemployment, immigration, industrial conciliation and arbitration, employer's liability laws, industrial insurance, profit sharing and co-operation. The work of labor unions in relation to labor problems is emphasized.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1917-1918 and alternate years.

- 8. Business Organization.**—A study of the various types of business organization, their characteristics and history, etc. Public policy with reference to corporations—especially transportation corporations—receive special attention.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1917-1918 and alternate years.

POLITICAL SCIENCE.

Professor Ashworth.

- 1. The American Government.**—Attention is first given to the background of the Federal and State constitutions. The formation, adoption and growth of the American Constitution is emphasized. A comparison of the government of the United States with the leading European governments is made.

Sophomore course for students in Group VI. Sophomore, Junior and Senior course for other students. Three periods, first semester. Credit of three semester hours.

Prerequisite for other courses in Political Science.

- 2. Political Parties.**—A study of the origin, history and platforms of the leading national parties with a consideration of such questions as the methods of nominating candidates, the conducting of campaigns, civil service reforms and election laws.

Sophomore course for students in Group VI. Sophomore, Junior and Senior course for other students. Three hours, second semester. Credit of three semester hours.

- 3. International Law.**—The development of the rules of international law, the rights and obligations of nations in times of war and of peace, the settlement of international disputes are considered.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1916-1917 and alternate years.

- 4. Constitutional Law.**—A study of the American Constitution viewed in the light of the Supreme Court decisions. This course is given for those who wish to make an extended study of the basic principles of United States Government.

Junior and Senior course. Three hours, second semester. Credit of three semester hours. Given 1916-1917 and alternate years.

BIOLOGY AND HYGIENE.

Professor Stahley and Mr. Nicholas.

Courses 1 to 7 are required studies in Group V. Course 8 is required of students in Municipal Engineering. All the courses are open as electives to those qualified to take them. The special pre-medical courses are 1, 2, and 3, required by the Pennsylvania State law. They are also valuable for general culture and as a preparation for teaching in secondary schools.

The work in all courses is carried on by lectures, demonstrations, dissections, drawings, daily quizzes, and stated examinations.

- 1. General Biology.**—This course acquaints the student with microscopic technique and general laboratory methods, while he studies selected types of plants and animals, taken from the lower forms of life. The purpose is to ascertain fundamental facts of structure and life processes, with the significant relationships in the two great kingdoms of organic nature.

Junior course. Three periods for twelve weeks. Two hours of lectures, and six hours of laboratory work. Credit of two semester hours.

- 2. Vertebrate Zoölogy.**—The essential features of their variations, in the vertebrate type of animals, are carefully considered, while representative forms are being dissected, beginning with the highest class, the Mammalia, and passing down to the lowest Chordates. Questions relating to comparative morphology and physiology of Vertebrates are freely discussed.

Junior course. Three periods for fifteen weeks. Two hours of lectures, and six hours of laboratory work. Credit of two semester hours.

- 3. Invertebrate Zoölogy.**—Selected types of Invertebrates are dissected. The basic structural scheme which obtains in the various groups, their adaptations to environmental conditions, and their economic value, are among the subjects which claim attention. The bearing of the theory of evolution in animal development is discussed during the year.

Junior course. Three periods for eight weeks. Two hours of lectures, and six hours of laboratory work. Credit of two semester hours.

- 4. Human Anatomy and Physiology.**—Special attention is given to osteology, joints, ligaments, and muscles. Tramond's preparations, consisting of real bony joints, with accurately placed artificial ligaments, and Azou's dissectible manikin, provide ample facilities for this part of the work. In this, as in all the branches of the course, physiological processes are constantly discussed.

Senior course. Three periods for seventeen weeks. Two hours of lectures, and six hours of laboratory work. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

- 5. Mammalian Histology.**—With the aid of prepared microscopic slides, the pupil studies the minute anatomy of the different tissues of the body. He also learns practically how to fix, harden, imbed, section, stain, and mount the important tissues.

Senior course. Three periods for twelve weeks. Two hours of lectures and six hours of laboratory work. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 6. Embryology.**—The principles of the maturation and fertilization of the germ elements are considered. The development of the chick is studied. Entire mounts are made, as well as mounts of serial sections of the incubating egg, from the first hour of incubation to the fifth day, when the organs are practically all formed.

Senior course. Three periods a week for six weeks. Two hours of lectures, and six hours of laboratory work. Credit of one semester hour.

Prerequisite, Courses 1, 2, and 3.

- 7. Botany.**—This course is in great part confined to the Spermatophyta, and continues the study of plants as begun in

the General Biology course, where type forms from the Thallophytes, Bryophytes and Pteradophytes were considered. Morphology, physiology and ecology are among the topics mostly emphasized. The study includes lectures, recitations, practical laboratory work and field excursions. Considerable attention is paid to plant analysis in the spring months.

Junior course. Two periods throughout the year. One hour recitation and two hours of laboratory work. Credit of four semester hours.

8. Sanitation and Bacteriology.—This is a course in municipal sanitation. The lecture part of the work is comprised in Course No. 9, second semester. The bacteriology of water analysis is pursued in a well-equipped laboratory.

Senior year. Laboratory, six hours for first six weeks, second recitation and two hours of laboratory work. Credit of four semester weeks, credit of one semester hour.

9. Personal and Public Hygiene (Sanitary Science).—During the first semester are discussed the questions of the waste and conservation of individual vitality in their application to efficient citizenship. During the second semester consideration is given to those essential principles of public hygiene which are necessary in protecting the health of communities.

Lectures, one hour weekly throughout the Senior year. Credit of two semester hours.

10. Physical Culture.—This end is sought under medical guidance in the Gymnasium during the winter months. A physical examination of each student is made when he enters college, and such kinds of gymnastic exercises are prescribed as seem desirable. The purpose is to encourage the promotion of health and physical vigor as necessary for successful mental application. Since much harm is often done in injudicious physical exercise, special effort is made to advise those who are suffering from defective bodily conditions how they may be helped by hygienic methods and the selection of forms of exercise particularly suited to their needs.

Three hours weekly throughout the year. Credit of two semester hours.

CHEMISTRY.

Professors Breidenbaugh, and Stover, Mr. Dickson and Assistants.

The courses in chemistry are not designed to prepare specialists in any department of the subject, but to give a general training in the science. The successful completion of these courses will prepare the student to enter on graduate or professional studies in any leading university, or qualify him for a more successful pursuit of any technical business, or fit him to teach chemistry in secondary schools.

The instructors are in daily attendance during the college term from 8 to 12 and from 1 to 4, except on Saturday afternoons.

1. **General Chemistry.**—No previous acquaintance with the subject is required. Those offering chemistry for admission will be allowed to substitute, as far as is best for the individual, from Course 2. The general principles and the fundamental laws of the science are included in the course, which consists of lectures, readings from approved text-books—such as Remsen's "College Chemistry," Newell's "Inorganic Chemistry for Colleges," Kahlenberg's "Outlines of Chemistry"—and laboratory work of which careful record in note-books is required. There are daily quizzes and frequent examinations. The last several weeks of the course are devoted to a practical review and examination in the determination of a certain number of substances, based on the results of previous study.

*Three lectures and six laboratory hours weekly for one year.
Credit of six semester hours.*

2. **Qualitative Analysis.**—The student, following an outline prepared for the purpose, becomes acquainted with the general reactions of the elements of the several groups and from these data constructs the scheme of analysis which is applied in a number of determinations. There is constant supervision and personal conference over the work. Reference book, Fresenius' "Qualitative Analysis."

*Nine laboratory hours including class work weekly for one year.
Credit of six semester hours.*

Prerequisite, 1.

3. **Quantitative Analysis.**—While such lectures as are desirable are given, this is essentially a personal laboratory course

An assigned minimum of work is required. Reference book, Fresenius' "Quantitative Analysis."

Nine hours of laboratory work weekly for one year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 4. Organic Chemistry.**—Lectures and preparations occupy about one-half the course; the remainder of the time is given to ultimate and proximate analysis of organic substances and of animal and plant products.

Three lectures and six laboratory hours weekly for one year. Credit of eight semester hours.

Prerequisite, 1 and 2.

- 5. Water and Sewage.**—Lectures, reading, and laboratory work on the character of water supplies and sewage products and their purification.

Two periods for one semester arranged to suit the class. Credit of two semester hours.

Prerequisite, 1, 2, and 3.

- 6. Cements.**—Reading and laboratory work on the nature of cements.

Two periods for one semester, arranged to suit the class. Credit of two semester hours.

Prerequisite, 1, 2, and 3.

- 7. Special Quantitative Methods.**—Students who are qualified are offered courses in advanced and applied analysis—such as mineral and ore analysis, the examination of food stuffs, etc.

Such hours as may be arranged for during Senior year, or during Junior year by such students as have completed other work in the department. Credit of six to ten semester hours.

- 8. Industrial Chemistry.**—A course of class-room exercises.

Three periods, second semester. Credit of four semester hours.

Prerequisite, 1, 2, and 3.

GEOLOGY AND MINERALOGY.

Professor Breidenbaugh.

- 1. Dynamical Geology.**—This course of lectures gives the student an acquaintance with the facts concerning inorganic geology, and a discussion of the dynamical agencies which have been operative in bringing the earth to the condition in which we now find it.

Two periods, first semester. Credit of two semester hours.

- 2. Historical Geology.**—A comprehensive discussion of the principles of evolution, with illustrations from historic geology.

The student is assigned readings from the text-books of Dana, Le Conte, Chamberlin and Salisbury, and other authors.

Field work and the preparation of papers from personal observation give practical application to the work. Frequent examinations are held.

Two periods, second semester. Credit of two semester hours.

- 3. Mineralogy.**—Following a short course of practical work in Crystallography, there is a series of determinations of not less than one hundred minerals by their physical and blowpipe characteristics.

Two periods throughout the year. Credit of four semester hours. Prerequisite, Chemistry 1.

MATHEMATICS AND ASTRONOMY.

Professor Nixon and Mr. Troxell.

The courses in mathematics are arranged to give thorough mental discipline; to meet the needs of teachers; to fill the wants of students desiring later to do graduate work in the best universities; to prepare for engineering or other technical courses. The instruction includes full explanation of all difficult points, free use of blackboard by both instructor and pupil, daily drill and notebook work, checking of results, application of mathematics to practical problems of every day life.

- 1. Solid Geometry.**—The usual text demonstrations; including the relations of planes and lines in space, the properties and mensuration of prisms, pyramids, cylinders, and cones, the sphere and spherical triangle; geometric models. Wentworth and Smith's "Solid Geometry."

Freshman course. Three periods one-third of year. Credit of two semester hours.

- 2. Plane and Spherical Trigonometry.**—Fundamental definitions, properties and analytical theory of trigonometric functions with the usual formulae; theory and principles of logarithms; applications to the solution of various practical problems. Granville's "Plane and Spherical Trigonometry."

Freshman course. Three periods two-thirds of year. Credit of four semester hours.

- 3. Advanced Algebra.**—Undetermined coefficients with applications to series and partial fractions; graphical method of solving equations; determinants with applications to simple equations; the elements of the theory of equations; including the solution of numerical equations by Horner's method. Wells' "Advanced Algebra."

Sophomore course. Groups I-VI, three periods one-third of year. Credit of two semester hours. Groups VII-X, four periods one-third of year. Credit of two semester hours.

- 4. Plane Analytic Geometry or Elementary Analysis.**—The equation and the plotting of the corresponding locus is discussed in general, after which the following topics are studied: line, circle, ellipse, hyperbola, parabola, and other curves, their tangents, normals, lengths, and areas. Solid Analytical Geometry, Smith and Gale's "Analytic Geometry"; Smith and Granville's "Elementary Analysis."

Sophomore course. Groups I-VI, three periods two-thirds of year. Credit of four semester hours. Groups VII-X, four periods two-thirds of year. Credit of six semester hours.

- 5. Differential and Integral Calculus.**—The latest and best methods of teaching the Calculus are used. This course prepares students for work in applied science, for more advanced courses in pure mathematics, and for engineering or other technical courses. Simple practical problems are given throughout that illustrate the theory and at the same time are of interest to the student. These problems do not presuppose an extended knowledge in any branch of science, but are based on knowledge that all students in a first course in the Calculus are supposed to have in common. Granville's "Differential and Integral Calculus."

Junior course. Groups I-VI, three periods throughout the year. Credit of six semester hours. Groups VII-X, four periods throughout the year. Credit of eight semester hours.

- 6. Differential Equations.**—This course is based on the Calculus of Junior year, and consists of recitations on methods of solution and geometrical interpretation of ordinary and partial differential equations. Cohen's "Differential Equations."

- 7. Solid Analytic Geometry.**—This course is based upon the Analytic Geometry of Sophomore year, and includes various topics of Analytic Geometry of three dimensions. C. Smith's "Solid Geometry."

- 8. Theoretical Mechanics.**—This course is based upon the Calculus of Junior year, and includes the mathematical treatment of various topics in mechanics. Smith and Longley's "Theoretical Mechanics."

6, 7, and 8, Senior courses. *Three periods throughout the year. Credit of six semester hours.*

- 9. General Astronomy.**—This course is designed to meet the needs of students interested in Astronomy. Practical work is included, but the emphasis is laid upon the theory. The subject matter is the following: determination of time, latitude, and longitude from observation with the transit; computing the time of sunrise, etc., and projecting a lunar eclipse; descriptive Astronomy covering the material contained in Young's "General Astronomy."

Senior course. *Two periods throughout the year. Credit of four semester hours.*

PHYSICS.

Professor Parsons, Mr. Creager, and Mr. Cessna.

- A. Elements of Physics.**—A course covering in an elementary way the general subject of Physics, largely descriptive, and requiring no previous knowledge of the subject. The instruction is given by lectures illustrated by experiment, recitations, problems, and laboratory work. This course is designed for those who can devote no more than one year to Physics, and not for those who will pursue the subject further.

Three lectures and three laboratory hours per week throughout the year. Credit of eight semester hours. (In some cases the course may be elected without the laboratory work).

- 1. General Physics.**—Mechanics of solids and fluids, properties of matter, sound and heat. The first part of a course in General Physics extending through two years, required of all students in the Scientific and Engineering Groups, and forming the basis of the more specialized courses. The instruction is given by lectures illustrated by experiments, recitations, and problems assigned for work outside of the class. Kimball's "College Physics" (or some text of equal rank) is used, supplemented by considerable additional material. No previous knowledge of the subject is assumed, but a high school course is advantageous as preparation.

Three hours per week throughout the year. Credit of six semester hours.

- 2. General Laboratory Physics.**—A laboratory course in mechanics of solids and fluids, properties of matter, sound and heat, designed to accompany Course 1. (Excepting in special cases the two courses must be taken together). In heat, some experiments on steam and other heat engines, and the heat of solution and chemical reactions, are included. It is desirable, though not required, that the student should have had an elementary laboratory course in Physics.

Three or six hours per week throughout the year. Credit of two or four semester hours.

- 3. General Physics.**—Electricity and magnetism, and light. A continuation of Course 1, emphasizing particularly electricity and magnetism, and including the fundamentals of photography. Lectures, recitations, and problems.

Three hours per week throughout the year. Credit of six semester hours.

Prerequisite, Physics 1 and Mathematics 3, 4.

- 4. Physical Measurements.**—Laboratory experiments in electricity and magnetism, and light. A continuation of Course 2 and designed to accompany Course 3. Some experiments in electrical measurements, diffraction and polarization of light, and photography, are included.

Three to six hours per week throughout the year. Credit of two to four semester hours.

- 5. Mechanics.**—A lecture course, based on the calculus, treating of statics, dynamics of translation and rotation, moments of inertia, elasticity, and vibrations, and accompanied by laboratory work in these subjects.

Two lecture hours and three laboratory hours per week, second semester. Credit of six semester hours.

Prerequisite, Physics 1, 3, Mathematics 5.

- 5a. Mechanics.**—Part of Course 5 as described above is given to engineering students in connection with Courses 3 and 4.

One lecture and one laboratory period (3 hours) per week, second semester. No separate credit for 5a alone.

- 6. Electrical Measurements.**—A lecture and text-book course in the theory of electricity and magnetism, electrical measurements and measuring instruments, accompanied by laboratory work.

One hour lecture and class work, and three or six laboratory hours, first semester. Credit of two or three semester hours.

Prerequisite, Physics 1-4, Mathematics 5.

- 7. Recent Advances in Physics.**—Radioactivity, discharge of electricity through gases, the electron theory, and other topics. Lectures illustrated by experiments.

Two lectures per week, second semester. Credit of two semester hours.

Prerequisite, Physics 1 and 3, and Mathematics 5.

- 8, 9. Mathematical Physics.**—Lecture course in mathematical Physics for graduate students (or other advanced students). The two courses alternate in successive years, forming together a complete course, but the topics treated may vary from year to year. Such subjects as mechanics, hydrodynamics, the kinetic theory of gases, the theory of sound, electricity and magnetism, physical optics, and the electro-magnetic theory, are treated.

Two or three lectures per week throughout the year.

Prerequisite, Physics 1-4, and Mathematics 5, 6.

- 10. Advanced Laboratory Physics.**—This comprises all the advanced laboratory work not included in the preceding courses, and is designed for graduate students and others specializing in Physics. The experiments or problems assigned are variable and may include research on some assigned topic.

The course may be taken through more than one year, credit being given proportional to the work done.

- 11. Physics Seminary.**—A meeting, for one hour a week throughout the year, of the advanced students, at which papers on assigned topics are presented, current topics are discussed, and reports given of recent work of investigators (obtained from reading the journals).

Credit of two semester hours.

LECTURESHIP ON CONSTITUTIONAL LAW.

Henry Wolf Bickl , Esquire.

Four lectures on the Constitution of the United States; including (a) a discussion of the American Doctrine of Constitutional Law, and (b) a consideration of the commerce clause, (c) of the clause forbidding the impairment by the States of the obligation of contracts, and (d) of the guaranties of personal liberty and equality contained in the Fourteenth Amendment.

LECTURESHIP IN SOCIOLOGY.

Mrs. Mary G. Stuckenberg has founded a Lectureship in Sociology in honor of her late husband, J. H. W. Stuckenberg, D.D., LL.D., by the terms of which the College will have annually a lecture on some phase of Sociology from the standpoint of Christian Ethics by specialists in this important field. The lecture is given at such a time as is convenient to the lecturer chosen for the year.

ENGINEERING COURSES

Full courses are offered in

Civil Engineering, Mechanical Engineering,
Municipal Engineering, Electrical Engineering.

All engineering students pursue the same subjects for the first two years. At the end of that time it is believed that most men will be able to make an intelligent choice between Civil and Municipal Engineering on the one hand, and between Mechanical and Electrical Engineering on the other. At the end of the third year a civil engineering student decides further between the general Civil Engineering course (Group VII) and the Municipal Engineering course (Group VIII). At the same point in his studies a mechanical engineering student decides between the course in Mechanical Engineering (Group IX) and that in Electrical Engineering (Group X).

Civil Engineering is an increasingly comprehensive term. Beside municipal engineering it includes among other subdivisions, topographic, railroad, and structural engineering. The Municipal (Sanitary) Engineering course is offered for those who wish to specialize somewhat in subjects relating more particularly to the problems of sanitation and civic betterment with which the engineering department of a modern city is concerned. The field for the mechanical engineer also has broadened of late, resulting in its subdivisions into branches of activity which call for technical knowledge in special fields. No attempt has been made in the following courses to meet these special demands, as it is the aim of the department to graduate men well grounded in the fundamentals and sufficiently broad in training to fill positions of some responsibility in any part of the field. Students interested in mechanical engineering are advised to follow Group IX unless especially interested in applied electricity; in that case they are recommended to the course in Electrical Engineering, Group X.

Engineering graduates not infrequently find employment in positions in which some knowledge of a branch of engineering other than that for which they have been trained is necessary or valuable. The engineering instruction is on this account designed to be broad and fundamental, and subjects which tend toward extreme specialization are not offered.

An increasing proportion of graduates in engineering engage

in callings more or less closely related to engineering, such as manufacturing, contracting, or commercial lines. In view of this there have been included in the engineering courses such subjects as will lay the foundations of a broad scientific education.

The following seven technical subjects underlie all engineering training, and are required of all students in Groups VII, VIII, IX and X.

- 1. Elementary Mechanical Drawing.**—Use of instruments, orthographic, isometric and cabinet projections, simple sections, intersections and developments, lettering, sketching, tracing and blueprinting. Text-book, French's "Engineering Drawing."

Three hours throughout the year. Credit of two semester hours.

Note. The College provides drawing desks, boards, etc., but each student furnishes his own drawing outfit, costing about eighteen dollars. Students are urged to avoid the purchase of cheap instruments which soon become worthless. Engineering students use their drawing instruments throughout their course and for years afterward. The purchase of an outfit of good grade is therefore economy.

- 2. Descriptive Geometry and Advanced Mechanical Drawing.**—

The first semester's work comprises descriptive geometry, problems relating to the point, line, and plane in space, followed by a thorough drill in sections, intersections, and developments, with applications to engineering and architectural problems. The instruction is designed to develop in the student the power of concise reasoning.

During the second semester the work is a continuation of Course 1 and covers shop drawings, working drawings, lettering, conventional signs, perspective, etc. Text-books, Tracy and North's "Descriptive Geometry," French's "Engineering Drawing," Hayes' "Emperical Design."

Two hours of recitation and four hours of drawing weekly, first semester; six hours of drawing weekly; second semester. Credit of five semester hours.

Prerequisite, Course 1.

- 3. Mechanics (A). Statics and Dynamics.**—Forces in equilibrium, simple structures, translation and rotation, work, energy, power. Text-book, Maurer's "Technical Mechanics."

Three recitations weekly throughout the year. Credit of six semester hours.

Prerequisite, Physics 1 and 2, Mathematics 3 and 4.

- 4. Metallurgy of Steel.**—A lecture course on the metallurgy of iron and steel. Ores and their preparation, blast furnace operation, manufacture of steel by open hearth, Bessemer, crucible and cementation processes, re-manufacture into commercial shapes.

One lecture weekly, second semester. Credit of one semester hour.

Prerequisite, Chemistry 1.

- 5. Hydraulics.**—A study of the mechanics of water at rest and in motion, with applications to a variety of problems relating to the pressure of water and to its flow in natural and artificial channels, pipes, etc. Text-book, Hoskin's "Hydraulics."

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Engineering 3 and Mathematics 5.

- 6. Materials Testing.**—Recitation and laboratory course in the study of the properties of engineering materials. In the first semester the standard tests of cement, mortar, and sand are made and compared, supplemented by lectures on cement manufacture. The common tensile, compressive, and transverse tests on steel, timbers, and concrete are made and discussed. The solution of practical problems is emphasized. The first semester's work is required of all engineering students. During the second semester the remaining common materials are tested, and the change in the properties of iron and steel due to heat treatment is taken up. The work of this semester is required only of students in Groups IX and X. Text-book, Boyd's "Strength of Materials."

Two recitations and three laboratory hours weekly, first semester. Credit of three semester hours. Three laboratory hours weekly, second semester. Credit of one semester hour.

Prerequisite, Engineering 3 and 4, and Mathematics 5.

- 7. Elements of Electrical Engineering.**—The application of the fundamentals of electricity and magnetism to electrical engineering practice. Theory, structure, and operation of electrical machinery. Recitation work supplemented by simple laboratory experiments. Text-book, Timbie's "Elements of Electricity."

Three recitations and three laboratory hours weekly, second semester. Credit of four semester hours.

Prerequisite, Physics 3 and 4, and Engineering 3.

CIVIL AND MUNICIPAL ENGINEERING.

Professor Allen and Mr. Reinert.

- 11, 12. Surveying (A).**—The field work is done during a period of three weeks immediately preceding the beginning of the Junior year.* It consists in drill in the use of the more common surveying instruments, supplemented by recitations held at frequent intervals and designed to coördinate the instruction. The remainder of the course consists of calculations and mapping done during term time. The calculations include those necessary in the ordinary office work of a land surveyor, while the mapping comprises plotting the notes of the survey made during the summer, tracing and blueprinting the map, and additional drill in plain lettering. Text-book, Tracy's "Plane Surveying."

Three weeks (145 hours) in August and September, and six hours of computation and drawing first semester. Total credit of four semester hours.

Prerequisite, Course 2.

- 13, 14. Surveying (B).**—The field work is done during a period of three weeks immediately preceding the beginning of Senior year.* Topographic surveying, using a variety of methods and instruments, including the plane table. A short railroad survey and location. Adjustments of instruments. The office work, done in term time, includes instruction in topographic drafting and the use of topographic maps, also the treatment of various subjects in higher surveying. Text-books, Tracy's "Plane Surveying," Breed and Hosmer's "Higher Surveying."

Three weeks (145 hours) in August and September, and six hours of drawing, first semester. Total credit of four semester hours.

Prerequisite, Course 11, 12.

- 15. Surveying (C).**—Required of students in Group IX; open to non-engineering students. A brief course in which a small survey is made, levels are taken, a map and a profile are plotted, some computing is done, etc.

Three hours of field work and drawing, weekly, first semester. Credit of one semester hour.

- 16. Railroads (A).**—A course in the mathematics of railroad curves, — simple, compound, and vertical; including

*The Summer Course in 1916 begins at 8 A. M. on Tuesday, Aug 29th.

switches and spirals. Earthwork calculation and the construction of mass diagrams. Text-book, Allen's "Railroad Curves and Earthwork."

Four recitations weekly, second semester. Credit of four semester hours.

Prerequisite, Course 11, 12.

- 17. Railroads (B).**—The necessary preliminary surveys are made during the preceding summer field work (Course 13). Course 17 includes making the plans, calculations, etc., involved in the preparation of a full report on the proposed construction, including its cost. Economics of railroad construction.

Six hours of drawing and computation weekly, second semester. Credit of two semester hours.

- 18. Mechanics (B).**—Stresses in framed structures, principally roof trusses and bridges of various types. Graphical and analytical methods of solution are employed. Text-book, Malcolm's "Graphic Statics."

Six hours of drawing weekly throughout the year. Credit of four semester hours.

Prerequisite, Course 3.

- 19. Structural Design.**—A course in the strength of materials as applied to the design of structures of steel and of wood. Beginning with simple joists under specific loadings, the student finally makes all the calculations necessary in the complete design of a number of bridges and roof trusses of various types. The stability of existing structures is also investigated. This is essentially a course in the mathematics of design and does not include drafting.

Nine hours of computation weekly throughout the year. Credit of six semester hours.

- 20. Structural Drafting.**—The making of detailed drawings for the component parts of a steel structure. Conformity with the best practice is required in the notation, and the drawings are carefully checked.

Six hours of drawing weekly, second semester. Credit of two semester hours.

- 21. Contracts and Specifications.**—The elements of contract law as applied to the mutual relations of engineer, contractor, and owner. Critical review of typical specifications and practice in specification writing. Text-book, Kirby's "Elements of Specification Writing."

One recitation weekly, second semester. Credit of one semester hour.

- 22. Masonry.**—Design and construction of stone and concrete structures, heavy foundations, arches, walls, and dams. Instruction is in part by recitation, but includes drafting-room work in the design of several typical structures. Text-book, Baker's "Masonry Construction."

Two recitations and three hours of drawing weekly, first semester. Credit of three semester hours.

- 23. Highways.**—Recitations on the design, construction, and maintenance of roads and pavements, with especial consideration of the exigencies of present-day traffic.

Two recitations weekly, second semester. Credit of two semester hours.

- 24. Water Supply Engineering.**—The quantity and quality of water from various sources. Works for the collection and storage of water, for its purification and for its distribution. Text-book, Turneaure and Russell's "Public Water Supplies."

Two recitations weekly, second semester. Credit of two semester hours.

- 25. Sewerage.**—Various types of design and construction are discussed in recitation. Plans for a small sewer system are made by each student. Modern methods for the purification and disposal of sewage and garbage. Visits are made to plants under construction and in use. Text-books, Kinnicutt, Winslow, and Pratt's "Sewage Disposal," Ogden's "Sewer Design," Ogden's "Sewer Construction."

Two recitations weekly, second semester. Credit of two semester hours.

- 26. Civil Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly throughout the year. Credit of two semester hours.

(Open only to Seniors in Groups VII and VIII).

MECHANICAL ENGINEERING.

Professor Wing and Mr. ———

- 31. Shop Work (A).**—Simple exercises in the formation of green sand moulds, supplemented by lectures on modern foundry practice. Bench and lathe work in wood, elements of pattern making.

Six laboratory hours weekly, first semester. Credit of two semester hours.

- 32. Shop Work (B).**—Forge practice in iron and steel. Shaping, hardening, and tempering of tools. Machine and bench work in metals. Lectures on modern shop practice.

Six laboratory hours weekly, second semester. Credit of two semester hours.

- 33. Kinematics.**—Theory of mechanisms, instant centers, cams, gears, linkages, velocity and acceleration diagrams, etc. Recitation work supplemented by the solution of practical problems in the drawing room. Text-book, Barr and Wood's "Kinematics of Machinery."

Two recitations and six hours of drawing weekly, first semester. Credit of four semester hours.

Prerequisite, Course 2.

- 34. Machine Design. (A).**—An elementary course showing the application of the fundamentals of mechanics and kinematics to machine design. Selection of mechanisms for specified work, analysis of energy and force problems in machines, and proportioning of detailed parts from theoretical and practical considerations. Text-book, Kimball and Barr's "Elements of Machine Design."

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Course 6 (1st semester), 4, and 33.

- 35. Machine Design (B).**—Application of principles of Course 34 to the design of two typical machines, including all necessary computations; working drawings of most important parts, and a finished assembly drawing. Text-book, Kimball and Barr's "Elements of Machine Design."

One recitation and six hours of drawing weekly throughout the year. Credit of six semester hours.

Prerequisite, Course 34.

- 36. Heat Power Engineering (A).**—Thermodynamics of gases and vapors, theoretical gas cycles, application of theory to problems of commercial heat engines, engine performances and efficiencies. Text-book, Hirshfeld and Barnard's "Elements of Heat Power Engineering."

Three recitations weekly throughout the year. Credit of six semester hours.

Prerequisite, Mathematics 5, and Physics 1 and 2.

- 37. Heat Power Engineering (B).**—A continuation of Course 36. Fuels, combustion boilers, gas engines, steam engines and

turbines, power house auxiliaries, etc. Efficiency and economy of operation. Selection and combination of elements for power houses. This study covers the theory necessary for Course 38. Text-books, Hirshfeld and Barnard's "Elements of Heat Power Engineering," and Gebhardt's "Steam Power Plant Engineering."

Two recitations weekly throughout the year. Credit of four semester hours.

Prerequisite, Course 36.

- 38. Power Plant Design.**—Design of a typical power plant, selection and arrangement of main units and auxiliaries. An outline drawing is made showing the location and arrangement of boilers, turbines, condensers, pumps, etc., the provision for coal and ash handling, and storage. Economic features of power house design emphasized. Reference book, Gebhardt's "Steam Power Plant Engineering."

Twelve hours of drawing weekly, second semester. Credit of four semester hours.

May be taken only in conjunction with Course 37.

- 39. Mechanical Engineering Laboratory.**—Calibration of common engineering measuring instruments, such as steam gauges, thermometers, indicator springs; determinations of quality of steam; measurements of power; efficiency tests of boilers, gas engines, pumps, etc. Computation periods.

Three laboratory hours weekly throughout the year. Credit of two semester hours. ..

Prerequisite, Course 36.

- 40. Mechanical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly throughout the year. Credit of two semester hours.

(Open only to Seniors in Group IX).

ELECTRICAL ENGINEERING.

Professor Wing and Mr. ———.

- 45. Theory of Electrical Machinery.**—Fundamentals of the electric and magnetic circuit; representation of alternating currents and voltages by vectors and complex quantities; study of the alternating current circuit; theory of trans-

mission lines; transformers, alternators, synchronous and induction motors, direct current machines, etc. Text-books, Christie's "Electrical Engineering" and Gray's "Electrical Machine Design."

Three recitations weekly throughout the year. Credit of six semester hours.

Prerequisite, Course 7.

- 46. Characteristics of Electrical Machinery.**—This course supplements the work of Course 45. Problems in alternating current circuits. Outline design and predetermination of performance characteristics of transmission lines, transformers, alternators, alternating current motors and direct current generators and motors. Practice is given in the use of standard hand books. Reference book, Gray's "Electrical Machine Design."

Two computing periods of three hours weekly throughout the year. Credit of four semester hours.

May be taken only in conjunction with Course 45.

- 47. Electrical Engineering Laboratory.**—Elementary and advanced experimental work in electrical engineering: the study of polyphase alternating current circuits, shape of A. C. waves, determination of the magnetic properties of steel and iron; commercial testing of alternators, transformers, synchronous motors, induction motors, D. C. machines, etc. Text-book, Karapetoff's "Experimental Electrical Engineering."

Six laboratory hours and one report weekly throughout the year. Credit of six semester hours.

Prerequisite, Course 7.

- 48. Generation of Electrical Energy.**—Selection and arrangement of equipment, both electrical and mechanical, for a modern central station; problems of power generation and distribution. Special attention is paid to the economic questions involved.

Two lectures weekly, first semester. Credit of two semester hours.

Prerequisite, Course 7.

- 49. Electrical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly throughout the year. Credit of two semester hours.

(Open only to Seniors in Group X).

Trips of Inspection.

Several short tours are arranged during the course for the inspection of engineering structures, power plants, shops, manufacturing establishments, etc., in the vicinity. Reports of such visits are prepared by each student from his individual notes.

Engineering Library.

A departmental library and reading room of reference books, periodicals, and technical reports is being built up in connection with the College Library. Students have access to the following publications:

"Engineering News," "Engineering Record," "Municipal Engineering," "Engineering Magazine," "Machinery," "American Machinist," "Power," "Electrical World," "General Electric Review," "Electric Journal," and the regular reports of the following societies: American Society of Mechanical Engineers, Connecticut Society of Civil Engineers, Ohio Engineering Society, Indiana Engineering Society, Michigan Engineering Society, Illinois Society of Engineers and Surveyors, Iowa Engineering Society, Engineering Association of the South.

Engineering Equipment.

For a detailed description of the equipment in engineering see page 114.

GENERAL INFORMATION

The College aims to develop the greatest possible individuality and the highest manhood of the student. The prevailing influences are such as tend to lead young men to an active Christian life and to a full realization of their personal responsibilities. The immediate supervision of the students is in the hands of the President and Dean with the Class Advisers.

CLASS ADVISERS.

A professor is appointed as Adviser for each class. The members of the class present any request to the Faculty through their Class Adviser and confer with him on personal and college matters (see page 13).

STUDENT GROUP ADVISERS.

The head of each Department acts as the adviser of all the students having a major in his Department. He is known as the Group Adviser. He exercises oversight in the student's selection of electives and in the general character of his work. The Group Advisers are as follows: Group I, Professor Biklé; Group II, Professor Grimm; Group III, Professor Wentz; Group IV, Professors Breidenbaugh and Parsons; Group V, Professor Stahley; Group VI, Professor Ashworth; Groups VII and VIII, Professor Allen; Groups IX and X, Professor Wing.

STUDENT COUNCIL.

Without lessening its authority and responsibility, the Faculty has delegated certain duties in government to the student body as an exercise in self-government. The students act through a Student Council of four Seniors,

three Juniors, two Sophomores, and one Freshman, elected by their respective classes. The Council acts in certain matters of discipline, and in matters concerning the general welfare of the student body and is a medium of communication between the students and the Faculty. Hazing in any form is forbidden. To have or to drink intoxicating beverages or to frequent places where such beverages are dispensed is forbidden.

TERMS AND VACATIONS.

The college year of 35 weeks is divided into two semesters. The first semester begins at 11 A. M. on the third Wednesday in September and continues, with recesses at Thanksgiving and Christmas, to the first Saturday of February; the second semester begins when the first semester ends and continues, with an Easter recess, to Commencement Day, the second Wednesday of June. The closing days of each semester are devoted to examinations.

ATTENDANCE.

Every student is required to attend on week days a prayer service at 12 M., in Brua Chapel. On the Lord's Day attendance is required at the morning service in the College Church. Those affiliated with other denominations than the Lutheran are, on request of their parents, granted permission to attend elsewhere. Ten per cent absences are allowed from chapel and church services each semester under the rules governing absences from class work.

Each student is allowed individually ten per cent absences from class-room work in each subject each semester. This allowance is expected to cover all ordinary absences. Fractions are not counted, and absences may not exceed four in any subject during a single semester. These absences are not allowed for the two days preceding nor for the two days following any recess. Absences are not allowed for announced examinations. Such absences can

be excused only by action of the Faculty; and the substitute examination will be held at such time as the instructor shall appoint. Unexcused absences count as zero on grade. A further allowance of absences may be granted to members of athletic teams, musical organizations, participants in literary contests, and to representatives of literary societies for the purpose of attending conventions, but such extra allowance may in no case exceed five per cent.

Gymnasium work of two periods weekly through the winter season, extending from Dec. 1 to Mar. 15, is required of the Freshman class, special cases for sufficient reasons excepted. Two absences are allowed for the season. Credits are given for attendance and attention, and any shortage in credits due to absences or lack of interest, must be made up later.

ELECTIVES.

A student having electives must deposit with the Registrar, within the first two days of the year, a written list of his electives, bearing the endorsement of the student's Group Adviser and of the instructors concerned. After the first week of the year changes in electives can be made only when approved by the Faculty, under such conditions as may be determined in each case. No regular student may drop an elective subject without faculty permission; failure to secure such permission will be regarded as a deficiency in the subject.

EXAMINATIONS.

Examinations are held in all subjects at the close of each semester or when, during the term, a subject is completed. Instructors may hold topical or quiz examinations at the time of any of the regular appointments with the class. Absences from these examinations are governed by the rules given above.

CONDITIONS AND DEFICIENCIES.

Freshman entrance conditions must be satisfied by the beginning of the Sophomore year.

A student whose grade in any course is reported as deficient at the close of a semester must present himself for re-examination at the beginning of the next semester; failing in this examination he must repeat the semester's work in that course.

Re-examinations for removing deficiencies are regularly held on the Tuesday preceding the opening of the first semester, and on the second and third Saturday afternoons of the second semester. No such examinations are held at any other time, except in the case of Senior finals.

A student who at the beginning of any college year continues deficient in more than one-third of a year's work will be enrolled with the class in which the deficiency occurs. The student will not be advanced in enrollment with his class until the deficiency has been removed.

A student deficient at the beginning of a year in courses aggregating twelve semester hours will be required to drop a corresponding number of semester hours in the regular work of the year.

RECORDS.

A record of scholarship and deportment, under the care of the Registrar, is kept for each student. The grades of scholarship are designated as follows: A (excellent), B (good), C (fair), D (poor, barely passed), E (failed, but entitled to another examination), F (failed utterly and must repeat with the next class), and Inc. (incomplete).

The student begins each semester with a deportment grade of 100. Deductions on account of unexcused absences are made from this grade at the end of each semester as follows: for absence from church 5, from chapel 2, from recitation 2, from gymnasium 2.

REPORT.

A report from the above record is sent to the parents or guardian of each student at the end of each semester. About the middle of each semester notice is given to the student and to his parents or guardian if his work is of low grade or if he has an excessive number of absences.

REQUIREMENTS FOR GRADUATION.

Every student completing the prescribed work of any group of studies and in addition enough electives to aggregate at least one hundred and twenty-eight semester hours, will receive the degree pertaining to that group, either Bachelor of Arts or Bachelor of Science; provided, however, that no student in any year shall carry less than thirty semester hours.

No student will be graduated who is not present at Commencement, unless he be excused by the Faculty.

CERTIFICATES.

Partial and Special Course students, as well as those who withdraw before completion of a full course of study, are entitled to a certificate giving a copy of the college record. No credits for college work will be certified to unless the usual college financial obligations have been met (see page 107).

MASTER'S DEGREE.

The degrees of Master of Arts and Master of Science are conferred, on those having the Bachelor's degree from approved colleges, according to the following regulations:

1. The Master's degree is conferred upon graduate students on the completion of at least one year of resident work. Such students must present to the Faculty Committee on Advanced Degrees, for approval, a plan of advanced studies involving the equivalent of at least twenty-four semester hours. It is recommended that at least one-half of the course be devoted to some one subject.

2. The Master's degree is also conferred on non-resident graduates of this College. These must, however, at the beginning of their candidacy arrange with the Faculty Committee on Advanced Degrees (see page 13) a systematic course of study, and must report at stated times to the head of the department in which the subjects have been chosen.

In either case the candidate must pass examinations satisfactory to his instructors and to the committee. Previous to the final examinations the instructors in charge shall file with the committee a statement of the work done by the candidate. If the report is satisfactory the candidate will be permitted to present himself for final examination. He shall also be required to prepare an essay or thesis upon an approved subject bearing on his principal study. This essay or thesis must be completed and submitted to the committee at least one month prior to the Commencement at which the degree is to be conferred, and if accepted, it becomes the property of the College.

Graduates of this College who have devoted at least one year to graduate work in residence at other colleges or universities and have fulfilled the above requirements may be admitted by the Faculty to the Master's degree. It may also be conferred upon college graduates who have completed courses of advanced study in professional schools, provided that the work done be in kind, grade, and amount equivalent to that required of other candidates for the same degree and that it has not been offered to satisfy the requirements for a professional degree.

HONORS.

The following honors will be awarded at the close of each year:

A. Final Honors will be awarded to members of the graduating class meeting the following conditions:

General Final Highest Honors will be awarded to those

students who have maintained throughout their four years the grade of A in all of their studies.

General Final Honors will be awarded to those students who have maintained the grade A in at least half of the work of their four college years and have not fallen below the grade B in their other studies.

Students entering at the beginning of the Sophomore year will be awarded the same honors if for three years they meet the above requirements as to grade.

B. Department Final Honors. If the head of any department recommends a student taking a major in that department as having shown special excellence in that work, the student shall be awarded Final Honors in that department provided he does not have a grade below B in more than three courses in other departments.

C. Class Honors for Freshman, Sophomore, Junior, and Senior Years. Highest Honors for the designated year will be awarded to those members of these classes who have maintained the grade A in all of their studies throughout the year.

Class Honors for any particular year will be awarded to those members of the class who have maintained the grade A in at least half of the work of the year and do not have a grade below B in any of their studies for the year.

These awards are announced at Commencement and published in the next Catalogue number of the BULLETIN.

PRIZES.

Muhlenburg Freshman Prize. The interest of a fund of five hundred dollars, contributed by F. A. Muhlenberg, D.D., LL.D, a former professor in this College, is given at the close of each year to that member of the Freshman Class who is found to have attained the highest grade of scholarship in Group I.

Baum Mathematical Prize. Charles Baum, M.D., Ph.D., Class of 1874, of Philadelphia, has contributed five hundred dollars, the income from which is to be given

annually to that member of the Sophomore Class who shows the greatest proficiency in Mathematics.

Hassler Latin Prize. Mr. Charles W. Hassler furnished a fund, the interest of which is annually expended for the purchase of a Gold Medal, to be presented to that student of the Junior Class, who, at the end of the year, shall be rated as the best Latin scholar.

Reddig Oratorical Prize. From the estate of Mr. Clarence Jacob Reddig, Class of 1877, of Shippensburg, there is annually contributed the sum of twenty-five dollars as an Oratorical Prize, to be contended for in public by the Junior Class, on Monday of Commencement Week.

Graeff Prize. This prize was founded by Mr. John E. Graeff, Class of 1843. The sum of thirty dollars is awarded for the best English Essay from a member of the Senior Class, on a subject previously assigned. The decision is made by a committee appointed by the Professor of English.

Prizes in Debate. The Literary Societies of the College provide three prizes of \$36, \$24, and \$15, respectively, for the encouragement of skill in debating. The first contest takes place about the middle of November between teams chosen by the Sophomore and Freshman Classes, respectively, and the winning team is rewarded with \$15. The second contest between the winning team and a team from the Junior Class, takes place about the middle of March, and the team that wins this contest receives \$24. The third contest, between the second victors and a team from the Senior Class, takes place about the middle of May, and the winners of this contest receive \$36. Winners of the prize of \$36 are excluded from further competition.

Elinore Taylor Brewer Greek Prize. The Class of 1883 has contributed the sum of five hundred dollars, the income from which is annually awarded as a prize to that member of the Sophomore Class who has done the best work in the regular Sophomore Greek course.

No student shall be eligible to any honor or prize unless he has had at our own College all the work required of all students in all groups for the year or years for which the honor or prize is awarded; and (unless substitutions have been approved at the time by special Faculty action) he must have had also all the work required in his group for the year or years for which the honor or prize is awarded.

SCHOLARSHIPS AND AID FOR STUDENTS.

Endowed scholarships worth \$30 each, and a limited number of scholarships worth \$50 each, are awarded annually to deserving students by the Finance Committee of the Board of Trustees. All applications for these scholarships must be made in writing and must state in full the reasons for the request. Such applications must be handed to the President before October 1st of the college year.

An endowment fund of \$5,000 for the aid of worthy and needy students has been established by Mr. C. H. Boyer as a memorial to his father, Rev. Matthew G. Boyer, D.D., '65, for over eighteen years a most faithful and efficient member of the Board of Trustees of the College. The income from this fund is divided into ten scholarships of \$25 each, awarded annually. Applications for this aid must be in writing addressed to Mr. C. H. Boyer, 29 La Salle St., Chicago, Ill., or to the President, before October 1st of the college year.

The Parent Education Society of the General Synod controls ten scholarships, worth \$30 each, which are open to young men preparing for the ministry in the Lutheran Church. Applications for the use of these scholarships should be made to the Chairman of the Scholarship Committee, J. A. Singmaster, D.D., Gettysburg, Pa.

Mrs. Theresa King Saltzman, of Harrisburg, Pa., has established an endowment fund of \$1,000, the income from which is awarded annually as a scholarship to some

worthy and needy student. Applications for this aid must be made in writing and must be handed to the President before October 1st of the college year.

A number of other \$30 scholarships have been endowed and are controlled by congregations, synods, and individuals. The Gettysburg School Board controls such a scholarship established by C. W. Thompson, Esq., of Lebanon, Pa. The authorizations from those controlling these scholarships must be handed to the President before October 1st of the college year.

A considerable number of students earn part of their college fees by caring for halls and class rooms and by doing other work about the campus and buildings. Twenty-five cents an hour is allowed for these services. All applicants for such employment must hand a written request for it to the President before October 1st of the college year.

Upperclassmen are employed as proctors and caretakers of the various college buildings and as assistants in the laboratories. One is employed to have charge of the Reading Room. These appointments are made by the Faculty; and applications for such positions must be made in writing and must be in the hands of the President before May 1st of the preceding college year.

There are many opportunities in the town of Gettysburg for students to earn money. Rev. S. F. Snyder, Assistant to the President, will be glad to assist those who desire such outside employment. Many students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College. Some of the students are granted allowances by the Athletic Council for work and supervision in the Gymnasium and on the Athletic Field. A number of students earn their board by managing student eating clubs, of which there are a large number, or by waiting on the table. Others earn money by acting as newspaper correspondents.

The children of clergymen are allowed a reduction of one-half of the tuition and general fees.

TREASURER'S BILLS.

The bills of the College Treasurer are made out for each semester and include half of each item for the college year. Until September 1918 a discount of 5 per cent will be allowed on all dues paid within six weeks of the opening of each semester.

No student will be graduated or receive honorable dismissal until all financial obligations to the College and for class publications and other student interests are settled, except when a student has registered a timely protest with the Faculty and the claim for relief has been allowed.

COLLEGE FEES.

A Registration Fee of \$5 is required on entering College and is payable to the Registrar.

The annual charge for Tuition and General Fees is \$100.

In any course pursued for a Master's degree the charge for Tuition and General Fees is \$75, when all the instruction has been given by members of the College Faculty. Of this \$25 is considered as a Registration Fee and is payable in advance, the balance being due one month previous to the date set for the conferring of the degree. Laboratory charges are extra. When the Master's degree is taken *in absentia* the total fee is \$25 payable in advance. Students in the Theological Seminary at Gettysburg may become candidates for the Master's degree by paying the regular registration fee of \$25; they are exempt from the payment of tuition exclusive of possible laboratory fees.

The Reading Room Fee is \$1.50.

The annual Gymnasium and Athletic Fee is \$8. This gives the student free admission to all intercollegiate games in Gettysburg.

ANNUAL LABORATORY FEES.

Based on three laboratory periods per week these are:

Biological Laboratory	\$14.00
Chemical Laboratory	18.00
Physical Laboratory	12.00
Mineralogy for the course	3.00

In addition to the Chemical Laboratory Fee a charge is made for apparatus broken or not returned in good condition. In the Physical Laboratory an additional charge is made for material used and any damage done to apparatus.

ANNUAL ENGINEERING FEES.

Junior year	\$15.00
Senior year	15.00
Summer Course in Surveying	10.00

In addition to these engineering fees a charge is made for apparatus broken or not returned in good order. A charge is also made for engineering apparatus used by students who do not pay the annual engineering fees.

BOARDING.

The College does not maintain a dining hall. The students receive excellent board in clubs and with private families at a cost of from \$3 to \$4 per week.

ESTIMATED COST OF A YEAR IN COLLEGE.

The expenses of a college student depend largely on the training and habits of the individual. To aid the student rooming in a College dormitory to calculate the probable cost of a year in college at Gettysburg the following estimates are submitted:

(A). ITEMS ON COLLEGE BILL.

	Low.	Moderate.	Liberal
Tuition and General Fees ..	\$100.00	\$100.00	\$100.00
Reading Room Fee.....	1.50	1.50	1.50
Room rent and heat (half room)	10.00	25.00	40.00
Gymnasium and Athletic fee	8.00	8.00	8.00
Electric light (half room).. <hr/>	2.10	2.10	4.20
	\$121.60	\$136.60	\$153.70
Five per cent discount for prompt payment	6.08	6.83	7.70
<hr/>			
Payable to Treasurer	\$115.52	\$129.77	\$146.00

(B). OTHER EXPENSES.

Board for 35 weeks	\$105.00	\$122.50	\$140.00
Laundry	15.00	18.00	20.00
Books and stationery..... <hr/>	15.00	18.00	20.00
Est'd cost for college year	\$250.52	\$288.27	\$326.00

To the above should be added laboratory or engineering fees in case the student takes courses involving such charges.

COLLEGE DORMITORY ROOMS.

The following rules govern the assignment of dormitory rooms in Pennsylvania Hall, Cottage Hall, South College Hall, and Thaddeus Stevens Hall.

All rooms are declared vacant May 1st of each year. Students desiring to remain in the rooms that they have been occupying have that right provided they make written application to the Registrar, on blanks provided by him for that purpose, during the first week

in May. During the second week of May all rooms not reserved in this manner are assigned to the members of the several classes in the following order: Juniors, Sophomores, Freshmen. The order of choice in any particular class is determined by a drawing for lots conducted by the Registrar and the President of the Student Council. Any rooms not taken are then available for new students entering the following September, and will be assigned by the Registrar in the order in which the applications for them (in person or in writing) are received.

The assignment of rooms in the Athletic Field House is made by the Athletic Council. Applications for rooms must be made in writing to S. F. Snyder, Graduate Athletic Manager, during the first week in May.

Prospective students are advised to apply for rooms as early as possible. The Registrar will assign rooms by correspondence if he is informed, at least approximately, of the kind of accommodations desired and whether or not a room-mate is wanted. As a rule rooming arrangements made in this way are entirely satisfactory, but if it should so happen that the assigned room does not suit or the room-mates are not congenial, there is usually no difficulty in making a rearrangement satisfactory to all concerned.

The charge for room rent, including steam heat, is given below for each room in the above-mentioned dormitories, and covers the period commencing the Saturday before College opens in September and ending the Saturday after College closes in June, with the exception of the Christmas vacation. The occupants of a room pay equal parts of the rental. Not more than two students are allowed to occupy one room or suite except in the case of some of the larger suites. In Pennsylvania Hall the designations are E for east division, M for middle division, and W for west division. S indicates South

College Hall; C, Cottage Hall; T, Thaddeus Stevens Hall;
F, Athletic Field House.

\$18.00: 255, 256, C.

\$20.00: 106, 108, W; 120, 122, E; 357, 358, 360, C.

\$22.00: 105, 107, W; 119, 121, 123, E.

\$25.00: 353, 354, 362, C.

\$26.50: 103, W; 125 E.

\$27.50: 101, W; 127, E.

\$30.00: 340, S; 270 F.

\$35.00: 111, 117, 118, M; 140, S; 361-363, C.

\$37.50: 104, W.

\$42.00: 206, 208, 306, 308, 406, 408, W; 210, 410, M;
220, 222, 224, 320, 322, 324, 420, 422, 424, E.

\$44.00: 205, 207, 305, 307, 405, 407, W; 219, 221, 223,
319, 321, 323, 419, 421, 423, E; 333, 334, 335, 336, 343,
344, 345, 346 S.

\$45.00: 153, 359, C.

\$48.00: 240, S.

\$49.50: 337, 338, 341, 342, S; 173, F.

\$55.00: 204, 304, 404, W; 211, 217, M; 226, 326, 426,
E; 331, 332, 347, 348, S.

\$57.00: 202, 203, 302, 303, 402, 403, W; 225, 228, 325,
328, 425, 428, E.

\$60.00: 201, 301, 401, W; 227, 327, 427, E; 157, 158, C;
273, 274, F.

\$62.00: 257, 258, C.

\$65.00: 154, C.

\$70.00: 159, 160, 259, 260, C; 172, 271, 272, F.

\$77.00: 212, 218, 312, 318, 412, 418, M.

\$80.00: 161, 162, C; 170, 171, F.

\$82.50: 133, 134, 137, 138, 141, 142, 145, 146, S.

\$85.00: 251-253, 252-254, C.

\$88.00: 411, 417, M; (suites of two rooms).

\$95.00: 242 and 244, S; 241 and 243 S; 235 and 237 S;
236 and 238, S; (suites of two rooms).

\$100.00: 261-263, 262-264, C.

\$140.00: 233, 245, S; (suites of three rooms).

Rooms 111, 117, 118, 212, 218, 312, 318, 411, 412, 417, 418, M, include a large study and a good-sized bedroom. Odd numbers are on the south side of the building in Pennsylvania Hall and on the west side of the building in South College Hall.

The cost of electric light, twelve cents per week for each 40-watt Tungsten lamp or its equivalent, is charged on the regular College bills. Any damage done to a room will be charged up against the occupants. Students desiring to change rooms during the school year must obtain permission to do so from the Registrar. Only the Superintendent of Buildings and Grounds is allowed to change the locks on doors. The rooms must at all times be accessible to the College authorities. The occupants of a room will be held personally responsible for the order maintained in that room. Students disregarding Faculty or Student Council Dormitory Regulations will forfeit their rights as occupants. The rooms are furnished throughout by the occupants, except those in Thaddeus Stevens Hall and the Athletic Field House. A janitress is employed by the College to clean thoroughly and set to rights every student room in the dormitories periodically; this service is without cost to the students. The Registrar will be glad to furnish any additional information that may be desired about dormitory rooms as well as rooms in the homes of families living in the town.

STUDENT PROPERTY.

The College disclaims all responsibility for the care or safety of any property belonging to students. With the exception of furniture, mattresses, tacked-down carpets and window shades, any student property left in a dormitory room during the summer vacation must be securely packed in barrels or boxes distinctly marked with the owner's name and the number of his room. No property should be left in closets or bureau drawers. This is to insure against possible loss and to facilitate the cleaning of the rooms.

MATERIAL EQUIPMENT

LIBRARIES.

The College Library contains 23,296 volumes, besides numerous unbound pamphlets. It is a regular depository of the United States Government and the Government of the State of Pennsylvania. Several hundred volumes of public documents are annually received from these sources.

The Library is available to all students under established regulations. During term time it is open for consultation and the drawing of books seven hours each week day, except on Saturday, when it is open for three hours. The librarian and his assistant are always ready to aid the students. The opportunities for the use of the Library are continually being increased by means of a systematic organization and the building up of a complete and attractive library of reference.

The income of a fund invested for the purpose partly provides for needed additions. Five per cent of the money received from tuition and general fees is also available for library purposes.

In the same hall with the College Library are the Libraries of the two Literary Societies. They comprise a large number of well-selected and standard volumes, which are annually increased through the income of separate funds. The Philomathean Library contains at present over 7,100 volumes; the Phrenakosmian Library over 7,150 volumes. These libraries are accessible to the members of the societies under their respective regulations, and are open for the issue of books on Wednesday at 4 P. M., and Saturday at 10 A. M., during term time.

READING ROOM.

The Reading Room is well supplied with daily and weekly papers and leading literary and scientific periodicals, thus enabling the student to become acquainted with current events and contemporary, scientific, literary, and other cultural movements. An annual fee of \$1.50 is charged to each student toward its maintenance.

LABORATORIES.

The Biological Laboratories on the second floor of Glatfelter Hall consist of two large, well-lighted, communicating rooms. They are supplied with twenty-five fine microscopes, and all the other appliances necessary in carrying on the work of the course outlined in the Department of Biology.

The Chemical Laboratories in the Chemical Laboratory Building, as described on page 119, are amply equipped with all the conveniences and apparatus and supplies that are desirable in the requirements for general and analytical chemistry, including work in organic preparations, proximate analysis, examination of water, and other special subjects.

The Physical Laboratory. The lecture room is provided with a large table with sink, water, gas, and electrical connections; apparatus supports, blackboard, charts, and black curtains and a hand-painted screen for stereopticon work. The laboratories, comprising six rooms for general work, besides photographic dark rooms, store room, and storage battery room, and the lecture apparatus room are equipped with modern and carefully selected apparatus for both elementary and advanced work. Alternating and direct electric current is supplied at different points by means of a central switch board, a motor generator, and a storage battery. The apparatus includes a Geryk double cylinder oil immersion air pump, high grade balances, spectrometers, photometer, and stere-

opticon; and in electricity, D'Arsonval galvanometers, Wheatstone bridges, potentiometer, voltmeters, standards of resistance, capacity, electro-motive force, and self-induction, ammeters and voltmeters for direct and alternating currents (all of the best German or American make); a complete dynamo and motor set illustrating different styles of direct and alternating current machines (induction, synchronous, three-phase, etc.); an induction coil giving an 8-inch spark, high frequency coils, electric wave apparatus, and telegraph, telephone, and wireless telegraph outfits, and Kathode ray and X-ray tubes.

ENGINEERING EQUIPMENT.

The equipment in the Engineering Departments is modern and adequate and is being augmented as necessity demands.

Instruction in mechanical drawing is given in a large, well-lighted room in Glatfelter Hall. The department is well equipped for the purpose and is supplied with drawings illustrating the best recent practice.

The surveying equipment has been recently increased by the purchase of a Bausch and Lomb transit and a Buff and Buff level. There are also included, in addition to a number of transits and levels, all the instruments in common use for the making of property and topographic surveys,—such as plane-table, traverse board, sextant, planimeter, level and stadia rods, tapes, etc.

The facilities for materials testing include a 100,000 pound Riehle universal testing machine, with the necessary measuring instruments for the determination of the physical properties of steel, cast iron, wrought iron, timber, concrete, etc. There is also a cement laboratory, with a Riehle tensile briquette machine of 1,000 pounds capacity, and a variety of other apparatus for making all the standard physical tests of cement, sand, and mortar.

The pattern shop, located in a commodious room in the

basement of Glatfelter Hall, is supplied with a speed lathe and an oilstone grinder, driven by individual motors, also numerous benches and hand tools, all of the most modern type. In addition there has been provided foundry equipment of an elementary nature for illustrating the fundamental principles of moulding. The College has recently installed a medium-sized engine lathe, a drill press, emery wheels, and numerous vises and bench tools. A portable forge with the usual collection of small tools has been added.

The foundation of an electrical engineering laboratory has been laid. There are facilities for work in both direct and alternating current phenomena. The apparatus includes several direct current motors and generators, a rotary converter, a synchronous motor, several polyphase and single phase induction motors, a number of transformers, and an assortment of direct and alternating current measuring instruments.

In connection with the College heating and pumping plant there is available for commercial testing such equipment as boilers, a gas engine, and two pumps. As necessity demands further apparatus will be added.

MUSEUM.

The Museum contains varied collections of fauna and flora and minerals, all of which are freely used in instruction. The Mineralogical Cabinet contains over 6,000 specimens, including not only very full suites of the more common and more important minerals, but also good specimens of many of the rarer minerals. The collection in Lithology numbering 3,000 specimens, and of iron in Metallurgy, have, by recent additions, become fairly representative in the most important departments of these sciences. The Botanical collection of 6,000 specimens, mainly presented by Miss Elizabeth C. Morris, of Germantown, Pa., is well arranged and contains a full representation of American Flora. A beginning has been

made of a Chemical Museum—to contain specimens of raw and manufactured materials in chemical industries. Friends of our institution can greatly aid us by making additions to these collections.

BUILDINGS.

Pennsylvania Hall, erected in 1836-38, was remodeled and improved in 1889. It contains eighty-six rooms for students, many of them *en suite*, so that those who may wish to do so can have separate study and sleeping rooms. In this building are also the reading rooms of the Literary Societies and the auditorium used by the College Y. M. C. A. These rooms are all heated by steam and lighted by electricity. Sinks with running water are located on every floor, and on the first and third floors are complete lavatories with hot and cold water connected with the College system of water-works.

South College Hall, erected in 1897, is a dormitory building of three stories accommodating about fifty students. It is finished entirely in hard wood, is heated by steam, lighted by electricity, has hot and cold water on each floor, and lavatories in convenient places. The first floor has eight rooms, each with open fire place, tile hearth, and spacious closets. These rooms may be used by one or two occupants, as preferred. On the second floor all rooms are *en suite*, each suite consisting of a study with one bedroom or two. These are also provided with hearths, closets, etc. The third floor is divided into sixteen single rooms.

Cottage Hall was built in 1856 as a double house for professors. In 1914, because of the great need for more dormitory accommodations due to the increase in the number of students, it was transformed into a College dormitory of thirty rooms. As it is very advantageously situated on the campus near the main gateway, and is fitted up with all modern conveniences, rooms in this building are among the most desirable to be had.

Glatfelter Hall, erected in 1888-89, is used for general college purposes. It is named in honor of the late P. H. Glatfelter of Spring Grove, Pa., a former trustee, who with his family has contributed largely to the College. On the first floor are the library and reference rooms, the President's and Registrar's offices, and recitation rooms. The second floor contains five recitation rooms, the biological laboratories, a drafting room, and a large Social Hall. A large museum and three recitation rooms are on the third floor. In the north wing of the third floor is the hall of the Philomathean Literary Society; in the south wing the hall of the Phrenakosmian Literary Society. In the basement are the laboratories of the Department of Physics with the recitation rooms directly above. The newly-equipped Engineering Laboratory and Shops occupy the entire north wing of the basement.

Thaddeus Stevens Hall, erected 1867-68, is a three-story brick building fronting on Carlisle street. It is heated by steam, lighted by electricity, and supplied with pure artesian water. On the first floor are class rooms, a study room, and a toilet room. The second and third floors are used exclusively as a dormitory for students. On the second floor the rooms are separate. On the third floor they are arranged *en suite* with a broad archway separating the study and sleeping apartments. The rooms are furnished with book-cases, wardrobes, washstands, tables, chairs, and iron enameled beds complete with springs and mattresses.

The Athletic Field House is situated on the north-east corner of Nixon Athletic Field. This is a dormitory designed especially for the use of the members of the College athletic teams and contains all the needed accommodations in the way of showers, hot and cold water, and so forth. The rooms are furnished with iron enameled beds complete with springs and mattresses, book-cases, wardrobes, tables, and chairs. The building is heated by steam and lighted by electricity.

The Brua Memorial Chapel, erected in 1889-90, is the gift of the late Col. John P. Brua, U. S. A., as a memorial to his parents. This building is used for daily prayers, for Commencement exercises, lectures and other occasions requiring a large audience room.

The Chemical Laboratory is a frame building, erected in 1872 and in 1890 converted to its present use. It contains on one floor a large lecture room, an office, store-rooms, chemical-room, balance-room, and two laboratories—providing for one hundred and twelve persons working individually. The building is fitted with the most approved appliances; gas and water at each desk; there are ample hoods, a water-distilling apparatus and large sand bath, and other necessary apparatus. The balance-room contains balances set on pillars especially built for the purpose. In the basement and in the attic are store-rooms. On account of the recent large increase in the number of students an addition to the Chemical Laboratory will be built. This will be ready for use in 1916 and will be adequate to meet the growing needs of the Department of Chemistry.

The Astronomical Observatory, erected in 1875, is furnished with an achromatic telescope having an object glass of six and one-half inches, with a transit instrument, chronometer, and other astronomical appliances.

The Gymnasium has on the first floor ample dressing rooms and bathing facilities, and a baseball cage. On the second, or main floor, a class of sixty members can be accommodated for gymnastic drill. This floor is partly enclosed for basketball purposes. The selection of specialized apparatus in light and heavy gymnastics is varied and complete. The office, where all physical tests and measurements are taken, is also on this floor, and is furnished with a full set of anthropometric apparatus. The gallery has a good seating capacity for spectators.

The Gymnasium is open every week day from 10 A. M.

to 10 P. M., and the time is apportioned between regular class practice, general practice, and games.

The Boiler House supplies the steam required for heating all the College buildings.

Besides these buildings there are on the campus the President's house, four halls erected by Greek Letter Societies, and two houses for janitors.

A professor's house, donated by Professor George D. Stahley, M.D., class of 1871, is now being erected on College ground, corner of Carlisle and Stevens Streets.

Nixon Athletic Field. Immediately north of the College buildings is the athletic field, which is carefully graded and securely inclosed and covers an area of over seven acres. It affords room and facilities for all kinds of out-door sports. Recently the Blough running track has been built. To the west of the field more than a dozen tennis courts have been laid out by the students.

CLASS MEMORIALS.

As testimonials of their love for their Alma Mater and substantial tokens of gratitude for what she has done for them, the classes indicated below have donated memorials to her as follows:

Class of 1883. On the thirtieth anniversary of their graduation the members of this class donated \$500 to the College, the income from which is awarded annually, under the name of the Elinore Taylor Brewer Greek Prize, to that Sophomore who does the best work in the regular Greek class.

Class of 1893. On the twentieth anniversary of their graduation the members of this class presented the fine memorial gateway at the main entrance of the College campus. The approximate cost of this imposing and artistic structure was \$1500.

Class of 1899. On the fifteenth anniversary of their graduation the members of this class presented the furnishings of the class-room for the Department of Phi-

losophy and Education and a departmental library for that department. This equipment, costing nearly \$600, was presented as a Class Memorial to their class-mate, the Rev. Jacob Hiram Straw, who died on the African mission field.

Class of 1902. This class presented the College a concrete walk extending from the entrance into South College Hall to the driveway in front.

Class of 1906. This class gave a concrete walk that runs across the entire front of Pennsylvania Hall connecting the various entrances.

Class of 1907. This class paid for the wiring of all the halls and rooms of Pennsylvania Hall for electric light.

Class of 1912. This class erected the handsome light post in the center of the campus, with its cluster of five large electric light globes, and put down a concrete walk extending from this central point to Pennsylvania Hall, much of the actual labor being done by the members of the class.

Class of 1913. The gift of this class was a concrete walk which extends from Pennsylvania Hall to Glatfelter Hall, connecting with the Gymnasium, and widening into a plaza in front of the entrance to Glatfelter Hall, with two handsome electric lamp posts on the two outer corners of the plaza. This class also put down part of the concrete walk in front of Thaddeus Stevens Hall.

Class of 1914. This class gave a concrete walk which reaches from the main gateway to the center campus light, together with three walks extending to Brua Chapel.

Classes of 1916 and 1917. These two classes presented a concrete walk reaching from Thaddeus Stevens Hall to the corner of Carlisle and Stevens streets. All labor of putting down this walk was done by the members of these classes.

STUDENTS' INTERESTS

LITERARY SOCIETIES.

Two literary societies are connected with the College, the Philomathean and the Phrenakosmian. These exert a remarkably favorable influence on the intellectual and social culture of their members. The exercises consist of essays, orations, debates, and music. The acquaintance with parliamentary law and the practice in clear thought and effective speech which are here gained, make these societies excellent schools in good citizenship. Each society has a spacious hall on the third story of Glatfelter Hall, conveniently and handsomely furnished. Their sessions are held every Friday evening. Every student should become an active member in one of these societies.

DEBATES AND ORATORICAL CONTESTS.

During the year there are debates between teams representing the different classes, also between teams of the literary societies. The College is also represented in the Intercollegiate Oratorical Union, being associated with Franklin and Marshall, Ursinus, Muhlenburg, and Swarthmore in an annual oratorical contest.

Y. M. C. A.

The Young Men's Christian Association of the College, the second one organized in the world, is an active agent in promoting religious interests among the students. Each Sunday morning and Thursday evening a public meeting is held, addressed by invited guests or students. Various Bible and Mission Study classes are organized in college classes, fraternities, and other special groups. A salaried Y. M. C. A. Student Secretary has general direction and co-operates with the officers and committees of the association. The Woman's Leagues of Pennsylv-

nia College have begun a campaign for the securing of \$30,000 towards the erection of a College Y. M. C. A. Hall to serve as a religious and social center for the student body.

LECTURES.

A series of free public lectures is delivered each year by members of the Faculty and others prominent in some field of general interest.

The Y. M. C. A. conducts at very reasonable cost a series of interesting lectures and musical entertainments. Occasional lectures or addresses by prominent men are delivered before the student body.

MUSICAL ORGANIZATIONS.

Active and well trained choral and instrumental musical organizations consisting of a band, an orchestra, a guitar and mandolin club, and a glee club, add to the pleasure of their members and of the audience at their public exhibitions. These clubs usually take a ten days' trip during the winter.

ATHLETICS.

The various college athletic sports, football, baseball, basketball, field sports and tennis, are well organized. They are recognized as an important part of college life and receive encouragement, but under such regulations as it is believed will prevent them from becoming a possible source of demoralization to the student body and from interfering with the primary work of the institution. The plan under which these sports are conducted gives the opportunity and encourages every student to take part regularly in some out-door exercise.

Students are permitted to participate in any or all branches of athletics unless parents or guardians have notified the Faculty to the contrary.

PRESS CLUB.

The chief aim of the Press Club is to bring the various

interests of the College before the public through the daily papers.

PUBLICATIONS.

THE PENNSYLVANIA COLLEGE BULLETIN is published by the Faculty four times during the year.

"The Gettysburgian," under the control of the student body, is published weekly, and makes a specialty of College and alumni news. A room in South College Hall has been provided as an office for the editorial staff of the GETTYSBURGIAN.

"The Y. M. C. A. Hand-Book," issued at the opening of each college year, gives valuable information and suggestions to incoming students.

"The Spectrum," an annual publication by the Junior Class, contains pictorial representations of the College with its various organizations and surroundings, and useful information about students and alumni.

All the periodicals aim at enlarging the means of communication between the College and its graduates, former students, and friends. These enterprises are cordially commended to the patronage of those interested in the welfare of the institution.

ADDRESSES OF ALUMNI.


The College is anxious to keep in touch with its alumni and ex-students not graduates, and requests that all changes in address be sent to the Registrar.

TEACHERS.

The attention of school boards, and others desiring teachers is called to the fact that it is frequently in the power of the Faculty to recommend suitable candidates. Many graduates successfully fill important positions in public and private institutions. The College course for teachers is arranged to meet the requirements of the School Code of Pennsylvania, thus securing the State Life Certificate for the graduates of the College. See page 75.

FORM OF BEQUEST.

I give, bequeath, and devise to "The Trustees of Pennsylvania College, of Gettysburg, in the County of Adams," in the State of Pennsylvania, and their successors and assigns forever, the sum of ——— (or shares in the bank of ———, or any other personal property or real estate, as the case may be), to be applied to the Endowment Fund of the Institution.

 A bequest to a benevolent corporation, to be legal, must be made, in Pennsylvania at least thirty days, and in New York at least sixty days, before the death of the Testator; and should be signed by two witnesses not officially related to the College.

ALUMNI ASSOCIATIONS.

The Alumni Association of Pennsylvania College holds its regular annual meeting Wednesday afternoon of Commencement Week. In 1876 the Board of Trustees granted the Association the privilege of nominating six of their number to membership in the Board, and of maintaining this number as vacancies occur.

The officers of the association are:

President:

CHARLES S. DUNCAN, ESQ., '82.....Gettysburg, Pa.

Vice Presidents:

CHARLES J. FITE, '98Pittsburgh, Pa.

PROF. CHARLES H. HUBER, '92.....Gettysburg, Pa.

HIRAM H. KELLER, ESQ., '01... ..Doylestown, Pa.

Secretary:

CLYDE B. STOVER, '94.....Gettysburg, Pa.

Treasurer:

H. C. PICKING, '79.....Gettysburg, Pa.

The various district alumni associations are active and potential factors in promoting the interests of the College and bringing the College to the notice of prospective students.

GETTYSBURG ACADEMY

This is a boarding school offering a four year course for students preparing for college and also a general or academic course for students who do not expect to enter college. As a training school for boys Gettysburg Academy seeks to cultivate habits of neatness and punctuality as well as industry and accuracy in study. It attaches the greatest importance to the culture of the heart and to the development of those manly virtues that make the truly Christian gentleman. The location, equipment, environment and ideals of the school are favorable for such training.

HOME LIFE.

It is the purpose of those in charge to give every student a happy, healthful home life. The Masters live in the school with the boys and are intimately associated with them both in their work and in their play. The large Living Room with its cheerful fire-place and comfortable furnishings is the gathering place of the boys when not on duty. Here is cultivated the "family spirit" of the school.

THE CAMPUS.

The Academy buildings are in the midst of ample and beautiful grounds adjoining the College campus. This proximity affords the students the influence of the scholastic atmosphere due to numerous literary exercises, debates, lectures and concerts such as only a college community affords. Near association with a college is a stimulus to study and often awakens the desire for a higher education. The Academy shares in the benefits

from the College endowment and supervision, in the use of its fine libraries of nearly forty thousand volumes and in the use of and the instruction given in a well equipped gymnasium. In this sense it is a part of Pennsylvania College of Gettysburg. It is separate and distinct from the College in that it has its own faculty, buildings and grounds and the student body has its own distinctive school life and interests.

THE MAIN BUILDING.

A fine new structure to be known as The Main Building is now under construction and *will be ready for occupancy in time for the opening of school in September, 1916.* This building is of beautiful, Colonial architecture and fronts one hundred and fifty-six feet on Carlisle Street. Into its construction and equipment have gone the very best and latest ideas that science, sanitation and school experience can give. The building is heated by a vacuum steam system from the central plant and lighted throughout by electricity. The plumbing is of the most approved sanitary design.

The first floor contains large, airy class-rooms, lavatory with hot and cold water supply, shower baths and a locker-room. There are also a number of rooms for students.

The second or main floor contains the large Living Room beautifully finished in Colonial style with an ample fireplace, tiled floor and comfortable furnishings. This provides a useful and delightful center for the school life. To the south of this is the large Chapel and Study Hall. Here are held the religious exercises, the literary society meetings and certain study periods. To the north is the Dining Hall with a capacity of one hundred boarders. Here the Masters and students take their meals together. On this floor is also the modern sanitary Kitchen equipped with the best devices and machinery for the preparation of food. The table is abundantly furnished with

wholesome, well-cooked food fresh from the rich farming and fruit country of the vicinity. Only pasteurized milk and cream is served; only pure filtered water and manufactured ice is used. The excellence and cheapness of food supplies in Adams County makes it possible to furnish a very good table at very low rates. Near the Living Room are the office of the Headmaster, a study-hall for girls who attend as day students, and a cozy reading room. The reading room is supplied with a large number of magazines and papers and is open every day for the use of the students.

The entire third floor contains rooms for the students and Masters. There are single and double rooms. On this floor there is another lavatory with hot and cold showers, drinking-font, and all modern toilet conveniences.

THADDEUS STEVENS HALL.

This building is named in honor of "The Great Commoner," who was one of the early friends of the College and a member of its Board of Trustees. It is also heated by steam and lighted by electricity. It is used exclusively for class-room and dormitory purposes.

OUT-DOOR EXERCISE.

The large grounds afford ample opportunity for baseball, football, basketball, tennis, etc. Every student is encouraged to take regular daily exercise in the open. In addition he is entitled to all the privileges of the College Gymnasium.

ADMISSION.

Students are admitted at any time of the school year to the grade to which they are qualified by previous study.

It is highly important that the student should enter the school as early in the course as possible. With the present high requirements for admission to colleges a hurried preparation is generally unwise and tends to retard the student's future progress. Accurate scholarship, at which the school aims, can hardly be secured without long and thorough drill, especially in the Languages and Mathematics. An additional year of preparation is often a large gain in the end because of the greater ease and thoroughness with which future work is done. The fact, however, is recognized that students differ widely in ability and industry, and every opportunity is afforded those, who can do so, to cover the required work in the shortest possible time.

Students who have advanced sufficiently in certain subjects to enter the Freshman class of the College but who are deficient in the Languages or Mathematics will have the opportunity without extra charge of making up their deficiencies with the Academy classes.

Girls are admitted as day students. A comfortable rest and study hall has been reserved for their exclusive use and they are not obliged to mingle with the other students except at the regular recitation periods. When at the Academy they are under the care of the Preceptress. Refined homes can be secured for them in town at moderate rates. The Headmaster is kept informed as to their conduct.

ADMISSION TO COLLEGES.

Gettysburg Academy is an accredited secondary school. All colleges admitting students by certificate accept its scholarship credits for entrance. This means that a student satisfactorily finishing a course at The Gettysburg Academy will be admitted without examination to Pennsylvania College at Gettysburg or to any other first grade institution admitting by certificate.

COURSES OF STUDY.

There are two courses, the Classical (with Greek), and the Scientific or Academic (with German).

The subjects taught are as follows:

CLASSICAL COURSE.

Sub-Freshman Class.

Periods per Week.

5. **Latin.**—Six books of the Aeneid; Prose Composition.
5. **Greek.**—Three books of the Iliad; Prose Composition.
5. **Mathematics.**—Wentworth and Smith's Plane and Solid Geometry.
2. **English.**—College Entrance Requirements as arranged by the National Conference on Uniform Entrance; Buehler's Exercises in English.
2. **History.**—Myers' Grecian History; Myers' Roman History; Collateral Readings; Note-books.
1. **Composition.**—Wooley's Hand-Book.
1. **Bible Study.**
1. **Physical Culture.**

Upper Middle Class.

5. ***Latin.**—Six of Cicero's Orations; Prose Composition; Caesar (Completed).
5. ***Greek.**—Four books of Xenophon's Anabasis; Prose Composition.
5. **Mathematics.**—Wells' Algebra for Secondary Schools.
2. **English.**—College Entrance Requirements.
2. **History.**—Montgomery's England and France; Collateral Readings; Note-books.
1. **Composition and Declamation.**
1. **Bible Study.**
1. **Physical Culture.**

*Special beginners' classes will be organized for students having advanced preparation in other subjects.

Lower Middle Class.

Periods per Week.

5. **Latin.**—Comstock's First Latin Book, Second Year Latin with Caesar.
4. **Greek.**—White's First Greek Book, with Readings.
4. **Mathematics.**—Wentworth's Arithmetic Completed; Wells' Algebra.
4. **English.**—Buehler's Grammar; College Entrance Requirements.
2. **History.**—Montgomery's United States.
1. **Composition and Declamation.**
1. **Bible Study.**
1. **Physical Culture.**

Junior Class.

4. **Latin.**—Comstock's First Latin Book.
4. **Mathematics.**—Wentworth's Arithmetic.
4. **English.**—Buehler's Modern English Grammar.
3. **English.**—College Entrance Requirements.
4. **History and Geography.**
1. **Composition.**
1. **Bible Study.**
1. **Physical Culture.**

Spelling is required with the English courses in the four classes.

LATIN-SCIENTIFIC COURSE.

Sub-Freshman Class.

Periods per week.

5. **Latin.**—Six books of the Aeneid; Prose Composition.
5. **German.**—Grammar; Prose Composition; Reading.
5. **Mathematics.**—Wentworth and Smith's Plane and Solid Geometry Revised.
5. **Solid Geometry Plane Trigonometry** (Elective).
2. **English.**—College Entrance Requirements as arranged by the National Conference on Uniform Entrance. Buehler's Exercises in English.

Periods per Week.

2. **History.**—Myers' Grecian History; Myers' Roman History; Collateral Readings; Note-books.

1. **Composition.**—Woolley's Hand-Book.

1. **Bible Study.**

1. **Physical Culture.**

Upper Middle Class.

5. ***Latin.**—Six of Cicero's Orations; Prose Composition; Caesar Completed.

5. ***German.**—Vos's Essentials and Reading.

5. **Mathematics.**—Wells' Algebra for Secondary Schools.

2. **English.**—College Entrance Requirements.

2. **History.**—Montgomery's England and France; Collateral Readings; Note-books.

1. **Composition and Declamation.**

1. **Bible Study.**

1. **Physical Culture.**

Lower Middle Class.

5. **Latin.**—Comstock's First Latin Book; Second Year Latin with Caesar.

4. **German.**—Vos's Essentials.

4. **Mathematics.**—Wentworth's Arithmetic Completed; Wells' Algebra.

4. **English.**—Buehler's Grammar; College Entrance Requirements.

2. **History.**—Montgomery's United States.

1. **Composition and Declamation.**

1. **Bible Study.**

1. **Physical Culture.**

Junior Class.

4. **Latin.**—Comstock's First Latin Book.

4. **Mathematics.**—Wentworth's Arithmetic.

4. **English.**—Buehler's Modern English Grammar.

3. **English.**—College Entrance Requirements.

*Special beginners' classes will be organized for students having advanced preparation in other subjects.

4. History and Geography.**1. Composition.****1. Bible Study.****1. Physical Culture.**

Spelling is required with the English courses in the four classes.

STUDENT OUTFIT.

All the boys except day students from the local community are required to room and board in the school. Each student will need the following outfit: Bible, four sheets, three pillow-cases, pillow, blankets, spread, towels, bath-robe, napkins, and napkin-ring, fountain pen and laundry bag (marked G. A.) All articles to be sent to the laundry should be plainly marked with the student's name.

The rooms are furnished with single beds, springs, felt mattresses, study table, chairs, book-case, chiffonier and window shades. A large closet is provided for each occupant. The only furnishings to be supplied by the student are a rug for the floor and an electric desk lamp with cord. The lamp will be provided by the school at cost if so desired.

SCHOLARSHIPS AND AID FOR STUDENTS.

A limited number of endowed scholarships worth \$30 each are awarded annually to deserving students by the Finance Committee of the Board of Trustees. Applications for these scholarships must be made in writing and should state in full the reasons for the request. Such applications must be handed to the Headmaster before October 1st of the school year. The children of clergymen are allowed a reduction of one-half of the tuition, that is, \$37.50 each school year.

The Parent Education Society of the General Synod controls ten scholarships worth \$30 each annually which are open to young men preparing for the ministry in the Lutheran Church. Application for the use of these

scholarships should be made to John A. Singmaster, D.D., Gettysburg, Pa.

A number of students can earn part of their school charges by caring for the halls and class-rooms, waiting on the tables in the Dining Hall and rendering other services about the institution. Applicants for such employment should make written request to the Headmaster before the opening of school in September. There are also opportunities for students to earn money in the town of Gettysburg. Mr. S. F. Snyder, Assistant to the President of the College, will assist those who desire such employment. Students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College.

EXPENSES.

The rate for boarding students for the full school year is \$260 or \$280 or \$300 according to the size and location of the room selected. The school year is divided into two equal semesters. Bills will be rendered at the beginning of each semester as follows:

	Lowest	Medium	Highest
	Rate	Rate	Rate
First Semester	\$130	\$140	\$150
Second Semester	130	140	150
	<hr/>	<hr/>	<hr/>
Total	\$260	\$280	\$300

The amount of each semester bill is payable in advance at the beginning of the semester. As a matter of accommodation, however, payment for one-half of a semester bill will be accepted at the beginning of the semester, in which case the balance must be paid not later than the middle of that semester.

These charges cover tuition, board, furnished room, heat, electric light, pew rent, use of athletic field and tennis courts, gymnasium, library, reading room and athletic fees. The money received from the athletic fees (calculated at \$6 for each student) is administered by a commit-

tee composed of faculty and student members for the benefit of the athletic interests of the school. There are no *extra fees*. It will therefore be seen that the cost of a course in Gettysburg Academy is much less than in the great majority of secondary boarding schools offering the same first-class advantages of instruction and equipment.

Each student upon reserving a room is required to deposit \$5 which will be credited on his first semester bill. He must also deposit \$1 to insure return of keys and care of the school property. Students responsible for damage to the school or student property are expected to report the same to the Headmaster who will make an equitable adjustment. Damage not so reported will be charged to the occupants of a room or in certain cases to the whole student body as circumstances may justify.

The tuition for day students is \$75 per school year including the athletic fee. The terms for payment are the same as for the boarding pupils.

ADDENDA.

Students should arrive during the afternoon or evening of the day preceding the opening of the school.

Trunk checks should be handed to the Janitor as other persons are not allowed to move trunks to and from the rooms.

Students entertaining guests must report the fact to the Senior Master. Visitors will be charged at the rate of twenty-five cents per meal.

A reduction of \$1 per week is made to "five day" boarding pupils.

Day students taking dinners in the Dining Hall of the school will be charged \$1 per week.

The use of tobacco in the buildings is prohibited.

The Academy catalogue containing cuts of the buildings and detailed information will be mailed upon request to the

THE HEADMASTER OF GETTYSBURG ACADEMY,
Gettysburg, Pa.

STUDENTS IN COLLEGE 1915—1916

GRADUATE STUDENTS. (NON-RESIDENT).

Amspacher, Victor Earl
Beard, Clinton William

Altoona
Niagara Falls, N. Y.

GRADUATE STUDENTS. (RESIDENT).

Allen, Chester
Cessna, Charles Paul
Creager, Paul Snyder
Diehl, Erle Kerper
Gerlach, Elsie Anna
Keefauver, Lloyd Conover

Gettysburg
Rainsburg
Gettysburg
Gettysburg
Gettysburg
Gettysburg

SENIOR CLASS.

Candidates For the Degree of Bachelor of Arts.

P. indicates Pennsylvania Hall; S, South College; C, Cottage Hall; S. H., Stevens Hall; F, Field House

Group.

Basehoar, Ethel Ruth ✓	2	Littlestown	133 N. Washington St.
Bausch, Frieda Bertha ✓	2	Gettysburg	228 Carlisle St.
Bell, Martin Luther	1	Big Spring, Md.	423 P.
Bittle, Foster David	1	Myersville, Md.	418 P.
Collins, Joseph Warfield	2	Gettysburg	319 P.
Dise, Eva	2	Lyon Station	133 N. Washington St.
Dorsey, Beesse Viola	2	Gettysburg	200 Springs Ave.
Garrett, Wouter Van	1	Hanover	218 P.
Glaes, James Sheaffer	1	Coatesville	319 P.
Grove, William Mervin	2	Red Lion	331 S.
Hershey, Phares Robert	2	York	121 P.
Hinman, Willis Stuart	1	Lynn, Mass.	119 P.
Hofmann, Frederick William	1	Altoona	422-424 P.
Keller, Herman August	1	Baltimore, Md.	257 C.
Krebs, Amos John	2	Glenville	259 C.
Lantz, Glenn Otto	2	Watsonstown	245 S.
McDonald, James Enzer	1	Aspinwall	422-424 P.
Mayers, Irving Russell	1	Littlestown	101-3 P.
Mehring, Percy Leroy	2	Taneytown, Md.	304 P.
Rechard, Ottis Howard, Jr.	1	York	304 P.
Reen, Sarah Hunter	2	Gettysburg	144 Springs Ave.
Rehmeyer, Lewis Herman	1	Glen Rock	306 P.
Rockey, Ordean	2	Belleville, N. J.	211 P.
Rothfuss, Edgar Lloyd	1	Montoursville	226 P.
Rudisill, Andrew Earl	1	Hanover	260 C.
Rudisill, Jacob Emanuel	1	Gettysburg	W. Lincoln Ave.
Sammel, William Raymond	1	Bedford	108 P.

	Group.		
Simonton, Chester Stewart	1	Altoona	402 P.
Smith, Donald Van Dyke	1	Lehigh	312 P.
Snyder, Lewis Neiffer	1	Harrisburg	421 P.
Spangler, John Elmer	1	Gettysburg	419-420 P.
Stevens, John M.	1	Fairfield	Fairfield
Stitt, Hugh Iseman	1	Ford City	122 P.
Stoudt, Lettie Mabel	2	Lenhartsville	133 N. Washingt'n St.
Sunday, William Franklin	1	York	117 P.
Swartz, Joshua Goheen	1	Harrisburg	159-161 C.
Taughinbaugh, Arthur Guy	2	Gettysburg	128 York St.
Tome, John Supplee	1	Maytown	124 P.
Trattner, Norman Frey	2	York	401 P.
Webner, Clarence George	1	Harrisburg	123 P.
Weidley, Paul Albert	1	Altoona	402 P.
Yagle, Jay Arthur	2	York	410 P.

Candidates For the Degree of Bachelor of Science.

Albert, LeRoy	4	Lebanon	344 S.
Appler, Guy Milton	4	Gettysburg	26 E. High St.
Buehler, Martin Howard	5	Germantown	159-161 C.
Cassidy, James Clyde	6	Altoona	A. T. O. House
Crilly, Alfred Barry	4	Altoona	241-243 S.
Faber, Fred Samuel	4	Gettysburg	28 Chambersburg St.
Frysinger, Jacob	4	Manchester	118 P.
Hoar, Clarence Victor	6	Lancaster	341 S.
Hoch, Ralph William	6	Reading	336 S.
Hurd, Fritz Draper	5	Williamsport, Md.	235-237 S.
Keckler, Grover Patterson	4	Gettysburg	87 Steinwehr Ave.
*Kendlehart, George Bowen	4	Gettysburg	
Kennedy, Edwin Bower	4	Harrisburg	342 S.
McCollough, Charles Boyd	7	Chicora	F.
Mahaffie, James Eugene	4	Renovo	F.
Nicholas, John Spangler	5	Washington, D. C.	134 S.
Park, James Loder	5	Indiana	346 S.
Patrick, William Henry, Jr.	8	Harrisburg	131 N. Washington St.
Reinecker, Jacob Howard	4	Gettysburg	341 York St.
Rice, Statton Luther	7	Marysville	117 Springs Ave.
Roth, George	6	Jersey City, N. J.	240 S.
Scheffer, George Eicholtz	8	Harrisburg	F.
Schwartz, Ernest David	2	Gettysburg	R. D. No. 1
Taylor, Will Sentman	5	Gettysburg	19 E. High St.
Trundle, George Hedges	5	Frederick, Md.	127 P.
Wray, Stanley Manners	5	Leechburg	134 S.
			Seniors 68

*Died Dec. 5, 1915

JUNIOR CLASS.

Candidates For the Degree of Bachelor of Arts.

Group.			
Ashton, Morville	1	Trucksville	31 W. Water St.
Bennett, Victor Wilson	2	Frostburg, Md.	360-2 S.
Bentz, Marie Elizabeth ✓	2	Gettysburg	26 Stevens St.
Bink, Howard Frank	1	Paxtang	321 P.
Bookhultz, George Elmer	1	Washington, D. C.	31 W. Water St.
Braunlein, John Howard	1	Baltimore, Md.	257 C.
Brenneman, Willis Raymond	1	Spring Grove	312 P.
Carlson, Raymond Albert	1	Renovo	324 P.
Diller, Charles Slagle	2	New Oxford	27 S. Franklin St.
Duncan, Charles William	2	Gettysburg	109 Lincoln Ave.
Embich, John Reigle	2	Shippensburg	Observatory
Fink, James Russell	1	York	312 P.
Fisher, Henry Earl	1	Clearfield	308 P.
Frommhagen, Frederick Carl	1	Oneonta, N. Y.	358 C.
Hallenbeck, Chester Traver	2	Guilderland Centre, N. Y.	255-257 C.
Hankey, Ralph Vernon	2	Apollo	146 S.
Hershey, Clarence Henry	1	Thomasville	312 P.
Hesson, Raymond Luther	1	Taneytown, Md.	204 P.
Keener, Robert Edward	1	Dallastown	412 P.
Kunkel, Norman Wilbur	1	Dover	405-406 P.
Lakin, Edmund Aldine	2	Hagerstown, Md.	W. Water St.
Lentz, John Max	3	Gettysburg	32 N. Stratton St.
Loudenslager, Paul Edward	1	Harrisburg	137 S.
Maxwell, David Elias	1	Jeannette	107 P.
Mehring, Herman Stanley	1	Philadelphia	203 P.
Peters, William Howard	1	Dallastown	220 P.
Ringler, Alexander Preston	2	Berlin	256 C.
Rost, Lawrence Eugene	2	Red Lion	117 P.
Schillinger, George William	1	Harrisburg	137 S.
Sheads, Marjorie Louise	2	Gettysburg	115 S. Stratton St.
Sincell, Charles Morris	2	Oakland, Md.	307 P.
Slifer, Luther Walter	1	St. Thomas	407 P.
Snyder, John Houston	1	Carlisle	335 S.
Sowers, Lauran Delk ✓	2	Hagerstown, Md.	W. Water St.
Spangler, John Allen, Jr.	2	Spring Grove	Observatory
Taughinbaugh, Minerva Irene	2	Gettysburg	128 York St.
Venable, Charles Leslie	1	Chambersburg	321 P.
Watson, Edith Esther ✓	2	Frostburg, Md.	134 York St.
Williams, Ira Alvin	1	New Freedom	412 P.

Candidates For the Degree of Bachelor of Science.

Bennett, John Crist	4	York	318 P.
Boyson, William Andrew	5	Harrisburg	245 S.
Bringman, Jay William	5	Gettysburg	Harrisburg Road
Brumbaugh, Luther Truman	4	Roaring Spring	327 P.

STUDENTS IN COLLEGE

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Group.

Campbell, William Clifford	4	Butler	F.
Cannen, James Vernon	7	Baltimore, Md.	219 P.
Daugherty, Davis Clifton	6	Butler	347 S.
Fager, Charles Buffington	5	Harrisburg	262-264 C.
Flenner, Robert Wareham	4	Tyrone	417 P.
Hatch, James Albert	5	Kittanning	146 S.
Hixson, George Paul	4	Ruffsdales	333 P.
Huff, Myron Reed	4	Gettysburg	27 S. Franklin St.
Lamont, Bruce Floyd	6	Hazleton	117 P.
Mead, Leon Roy	10	Newberry	325 P.
Neu, Paul William	4	West Hoboken, N. J.	241 S.
Newcomer, Samuel Herbert	4	Smithsburg, Md.	120 Carlisle St.
Ruth, Harry Foss	4	Scottdale	333 S.
Shearer, Roger Loucks	4	York Haven	219 P.
Sowers, J. Claire ✓	6	McKnightstown	212 P.
Springhorn, Charles Edwin	4	New York, N. Y.	138 C.
Starr, Henry Etter	4	Millersburg	129 N. Washington St.
Williams, Frank Billmeyer	5	Bloomsburg	245 S.
Zane, Ida Dorothy ✓	4	Gettysburg	227 Carlisle St.
Zeilinger, Albert Henderson	4	Williamsburg	105 P.
			Juniors 63

SOPHOMORE CLASS.

Candidates For the Degree of Bachelor of Arts.

Group.

Bare, Ethel Grace	1	York	26 Stevens St.
Becker, Horace Gilbert	1	Hanover	157 C.
Bortz, Roland George	1	Apollo	203 P.
Creager, Harold Luther	1	Gettysburg	248 Baltimore St.
Deardorff, Eva Clare ✓	2	Gettysburg	307 Baltimore St.
Deibert, Allyn Thomas	2	Washington, D. C.	153 C.
Drawbaugh, Jacob Wilbur	1	Harrisburg	332 S.
Duff, Stewart Emmons	2	Altoona	254 C.
Farmer, Clayton Stultz	3	Marietta	419 P.
Fisher, Nelson Franklin	1	Milton	427 P.
Floto, Max Crawford	2	Connellsville	334 S.
Gotwald, Luther Alexander	1	York	262-264 C.
Hamme, John Alfred	2	York	261-263 C.
Herman, Clyde Henry	1	York	135 N. Washington St.
Knubel, Frederick Ritscher	1	New York, N. Y.	138 S.
Lady, Ira Ellsworth	3	Arendtsville	205 P.
Laird, Robert Malcolm	1	Huntingdon	258 C.
Lecrone, John Gladfelter	3	York	227 P.
McCullough, John Milton	2	Chicora	161 N. Washington St.
Miller, Luther Paul	2	Harrisburg	106 P.
Monk, Clarence Burleigh	2	Turtle Creek	222 P.
Musselman, Helen Nunemaker	2	Gettysburg	247 Baltimore St.
Nicker, Charles Cyrus	1	Huntingdon	258 C.
Saul, Harry Luther	1	Trenton, N. J.	202 P.
Seerist, Mark Howard	2	Hanover	261-3 C.
Shearer, Paul Bomberger	1	Shippensburg	328 P.
Smelch, Earl Allison	1	York	303 P.

	Group.		
Snider, Verl Eugene Cluts	1	Taneytown, Md.	111 P.
Stonesifer, Wade Earl	1	Emmitsburg, Md.	302 P.
Wagner, Ralph LaShelle	1	Gordon	202 P.
Weaver, Lorna Jeannette ✓	2	Gettysburg	68 W. High St.

Candidates For the Degree of Bachelor of Science.

Baker, Ernest William	5	Lancaster	109 York St.
Barbehenn, John Berthold	4	Jersey City, N. J.	218 N. Stratt'n St.
Brown, Harry Alvin	5	Thomasville	303 P.
Buck, Edward Hastings	5	Penbrook	353 C.
Buffington, Chester Miles	9	Harrisburg	154 C.
Cadman, Eugene Etwell	2	Millville	418 P.
Clemens, Arthur Knisely	4	Steelton	212 P.
Croll, John	4	Middletown	426 P.
Eberly, Seibert Durboraw	4	Chambersburg	157 C.
Ernest, Jay Blair	6	Mifflintown	363 C.
Finn, Howard Nelson	4	Kingsley	233 S.
Gehauf, Bernard	4	Frostburg, Md.	357 C.
Gingrich, Luther Raymond	9	Waynesboro	359 C.
Glunt, Arthur William	6	Altoona	A. T. O. House
Harper, William Butler	4	Martinsburg, W. Va.	212 P.
Krissinger, Charles Stewart	7	Berlin	217 P.
Kunkel, Otto	7	Glen Rock	117 P.
Le Vine, Charles	6	Indiana	F.
Lins, Harry William	7	Lewistown	31 W. Water St.
McCreary, Ralph Work	4	Indiana	253 C.
McNabb, Wallace Morgan	4	Belleville	362 C.
Matter, Lawson Deacon	8	Harrisburg	154 C.
Mellinger, Wilbur Sittler	6	Leetonia, Ohio	139-162 C.
Mercer, Robert Honey	7	Bloomsburg	133 S.
Miller, Charles Edward	8	Harrisburg	245 S.
Mizell, Russell Francis	4	Gettysburg	Harrisburg Road
Orr, James Carlyle	4	Indiana	318 P.
Power, Edmund Emanuel	7	Gettysburg	316 Baltimore St.
Rebuck, Walter Edgar	4	Shippensburg	328 P.
Rouzer, Harvey Webster	4	Gettysburg	Delap Ave.
Sachs, George Amos	4	Gettysburg	140 E. Middle St.
Scheffer, Louis Kossuth	8	Harrisburg	337 S.
Settlemyer, Fred Henry	4	Gardnerville, Nev.	223 S.
Sheffer, Paul Ritchie	4	Fairfield	202 Chambersburg St.
Shockey, Ralph Irl	4	Waynesboro	359 C.
Shriver, Ralph Edwin	4	Chambersburg	322 P.
Snyder, Arthur Kenneth	7	Vandergift	342 S.
Snyder, Charles Franklin	5	Millersburg	426 P.
Stermer, Paul Ernst	7	York	201 P.
Stratten, Harry Theopholis	8	Chambersburg	F.
Taylor, George Cornwell	9	Gettysburg	19 E. High St.
Trump, Frank Myers	5	Martinsburg, W. Va.	158 C.
Weigel, Frank Moore	5	Columbia	347 S.
Wells, Hibbert Preston	10	Chester Springs	135 N. Wash. S.
Wible, Charles McCreary	5	Gettysburg	Emmitsburg Road
			Sophomores 7

FRESHMAN CLASS.

Candidates For the Degree of Bachelor of Arts.

Group.

Apple, John Adam	2	Sunbury	141 S.
*Baker, Elwood Lee	1	Harrisburg	408 P.
Baker, Ralph Wolf	1	New Oxford	326 P.
Baker, Robert Clinton	3	Bloomsburg	133 S.
Barclay, Milton Russell	1	Scottdale	31 W. Water St.
Barshinger, Henry Stephen	2	York	249 Carlisle St.
Bowers, Grayson Hunter	3	Harmony Grove, Md.	237 S.
Clouser, Paul Russel	1	Harrisburg	137 S.
Deardorff, Boyd Harold	1	Dillsburg	301 P.
Dulebohn, George Roscoe	1	Mason-Dixon	225 P.
Faust, Martin Luther	2	Ambler	343 S.
Francis, Reginald Kiefer	2	Sunbury	141 S.
Garman, Walter Earl	1	Brodbecks	425 P.
Gauger, William Clarence	3	McEwensville	428 P.
Gold, Frank Albert	1	Butler	218 P.
Grove, Elwood Martin	1	Red Lion	331 S.
Hagedorn, Ivan Henry Carl	1	Philadelphia	206 P.
Hankey, Ralph Lee	2	York	320 P.
Hilner, Howard Kauffman	1	Harrisburg	321 P.
Himes, Donald Eugene	1	Pittsburgh	223 P.
Hoke, Franklin Levi	2	Penbrook	353 C.
Huffer, Ralph Singleton	1	Burkittsville, Md.	222 P.
Isaac, Edward John	1	Brighton, Mass.	121 P.
Keller, Lloyd Monroe	1	Shrewsbury	228 P.
Kopp, Curvin Franklin	2	York	161 N. Washington St.
Kopp, Raymond Marion	2	York	123 Springs Ave.
Lecrone, Edgar Henry	3	York	227 P.
Lehn, John Henry	1	York	31 W. Water St.
Lybarger, Donald Fisher	3	Reading	208 P.
Markel, William Daniel	3	Evans City	F.
Miller, Harman Frederick	1	Baltimore, Md.	125 P.
Miller, John Bringman	2	Spring Grove	118 P.
Miller, Robert Sheridan	1	Johnstown	228 P.
Morrison, William Earle	1	York	218 P.
Mummert, Lewis Jacob	1	Hanover	118 P.
Neff, Edgar Ralph	1	York	161 N. Washington St.
Neiman, Leonard Adam	1	Dover	405-406 P.
Olinger, Lavinia Ruth ✓	2	Gettysburg	34 W. Middle St.
Pfeffer, Mary Ellen ✓	2	Gettysburg	Emmitsburg Road
Phillips, Guy Allen	1	East Berlin	326 P.
Potter, Alexander Oberlander	3	Berlin, Canada	120 Baltimore St.
Rank, James Lindley	2	Frostburg, Md.	357 C.
Redcay, William Harold	1	Hanover	221 P.
Remsberg, Robert Alden	1	Funkstown, Md.	31 W. Water St.
Rutherford, William Harold	1	Philadelphia	347 S.
Schmidt, Frederick John	2	Philadelphia	354 C.
Schwartz, Wayne Timalium	2	York New Salem	405-406 P.
Shindler, Raymond Clayton	1	York	412 P.

*Died Nov. 3, 1915

Sieber, William Thomas	1	McAllisterville	418 P
Simpson, Lowell Vogel	2	Coleman	120 P.
Snyder, John Gallaher	1	Pittsburgh	302 P.
Stamm, Raymond Thomas	1	Milton	427 P.
Stewart, James Raymond	1	Philadelphia	206 P.
Stock, Earl Kresge	3	Wyoming	259 C.
Sunderman, Frederick William	2	Juniata	207 P.
Wheeler, Warren Wolford	1	Harrisburg	411 P.
White, Raymond Harrison	1	Harrisburg	408 P.
Yund, Roy La Verne	1	New Kensington	403 P.

Candidates for the Degree of Bachelor of Science.

Anderson, Charles Stephen	9	Harrisburg	408 S.
Anderson, Dudley Hulings	6	Kittanning	320 P.
Anglemyer, Roland Cope	9	Leetonia, Ohio	411 P.
Bjurberg, Paul Henry	4	Reading	413 P.
Blocher, David	4	Gettysburg	28 W. Middle St.
Book, John Edward	5	Harrisburg	236-8 S.
Brenneman, James Alexander	6	Freeport	142 S.
Christ, Bruce Levi	4	Pine Grove	305 P.
Crissman, Lyall Nichols	7	Elkins, W. Va.	360-2 C.
Diller, Edgar Isaiah	5	New Oxford	221 P.
Dippel, Harry Weber	4	Jersey City, N. J.	348 C.
Dorsey, William Lewis	4	Meriden, Conn.	W. Water St.
Eberly, Harry Bell	6	Chambersburg	354 C.
Emanuel, Daniel Victor	8	Harrisburg	F.
Fleck, George Slayman	6	Altoona	235-237 S.
Flenner, Albert Lawrence	4	Tyrone	417 P.
Frey, Vernon Dewey	6	Red Lion	111 P.
Froehlich, Samuel Sloane	5	Harrisburg	332 S.
Frye, John William	4	Pine Grove	305 P.
Garvin, Henry Watterson	4	Gettysburg	213 Buford Ave.
Gilliland, Samuel Alexander	6	Gettysburg	239 Carlisle St.
Harbaugh, Wilfred Le Cron	5	Waynesboro	363 C.
Hartley, Mahlon Artman	7	Gettysburg	301 Carlisle St.
Hefflinger, David Mitchell	4	Harrisburg	201 P.
Hess, Paul Lower	6	Red Lion	111 P.
Howard, Ralph Acker	5	Everett	242 S.
Hulsizer, John Edward	5	Woodcliffe, N. J.	149 Carlisle St.
Keim, Cameron Dolson	4	Steelton	212 P.
Lampe, Russell Franklin	5	Altoona	207 P.
Latshaw, Leslie Ralph	4	Marion	322 P.
McCreary, Aaron Monroe	4	Vera, Canada	129 E. Water St.
McDonnell, Carroll Richter	7	Gettysburg	140 W. Middle St.
McFall, John Charles	6	York	145 S.
McKee, Charles William	9	Butler	F.
McNitt, Allen Cummins	10	Lewistown	129 Chambersburg St.
Menchey, John Albert	4	Gettysburg	63 W. High St.
Metzger, John Hubert	6	Rebersburg	140 S.
Miller, George Reich	7	Harrisburg	236-238 S.
Miller, Paul Stanley	9	Connellsville	334 S.

Moyer, Clifford Zendt	6	Souderton	129 Chambersburg St.
Mumma, Richard Good	4	Steelton	217 P.
Oyler, Ralph Ziegler	4	Gettysburg	218 York St.
Phillipy, Lester Newton	8	Greencastle	161 N. Washington St.
Plank, John Earl	7	Gettysburg	R. D. 4
Poust, George Standish	6	Hughesville	149 Carlisle St.
Prestwich, George Fry	10	Collingswood, N. J.	345 S.
Rearick, Josiah Blake	4	Vandergrift	159 Broadway
Reinecker, Haydn Plank	4	Gettysburg	341 York St.
Richards, James Smiley	4	Altoona	F.
Royer, David Amos	8	York	411 P.
Runde, Henry August	9	Jersey City, N. J.	240 S.
Saltsman, Charles Kunkel	6	Harrisburg	404 P.
Scheffer, Williams Brooks	4	Harrisburg	337 S.
Shaner, David Donald	7	Birdsboro	125 N. Washington St.
Shaub, Paul Daniel	5	New Freedom	129 N. Washingt'n St.
Shutter, Clarence	6	Steelton	338 S.
Stahler, Alan Donald	5	Lebanon	348 S.
Stallsmith, Maurice Charles	4	Gettysburg	132 E. Middle St.
Stambaugh, Frederick Michael	10	Hanover	125 P.
Stauffer, Russell Deardorff	9	Gettysburg	133 E. Water St.
Weaner, Howard Henry	5	Gettysburg	70 Stevens St.
Widder, George McAlister	5	Harrisburg	233 S.
Witherow, Harry Minnick	9	Taneytown, Md.	417 P.
Wohlfarth, John Casper	8	Harrisburg	404 P.
Wolfe, Paxton Walter	4	Maytown	419 P.
Yagel, Roy Oliver	4	York	410 P.
			Freshmen 124

Partial Course Students.

Baker, George Bush	York	F.
Barbehenn, Henry Edward	Gettysburg	218 N. Stratton St.
Bietsch, Fred Wilmer	Chambersburg	205 P.
Blair, William Jeremiah	Gettysburg	247 N. Washington St.
Brame, Charles Arthur	New Oxford	425 P.
Brame, Ralph Emerson	New Oxford	425 P.
Bream, John William	Cashtown	202 Carlisle St.
Chain, Gerald Radnor	West Newton	324 P.
Craig, Melvin Lewis	Butler	F.
Dodd, William Earle	Martinsburg, W. Va.	362 C.
Dodson, Hobart W.	Nanticoke	160-2 C.
Earley, Edwin Armistead	Hinton, W. Va.	F.
Enke, Sheldon Alonzo	Nanticoke	F.
Evans, Howard McKinley	Osceola Mills	43 S. H.
Eves, Joseph Harold	Millville	F.
Godwin, William Francis	Fairfield	Fairfield
Good, George Frick	Waynesboro	161 N. Washington St.
Jacobs, Norman Gephart	Somerset	129 E. Water St.
Le Gore, Bruce Stull	Le Gore, Md.	F.
Little, Percell Haydn	Hanover	241 S.
Macina, Louis De Raymond	New Haven, Ct.	125 N. Wash. St.
Miller, Kenneth Jamison	Bruin	161 N. Washington St.

Miller, Walter L.	Cumberland, Md.	142 S.
Milliken, John Fairfield	Malden, Mass.	F.
Montgomery, Charles Sumner	Roselle Park, N. J.	233 S.
Morris, Joseph Theodore	Gettysburg	301 N. Stratton St.
Munnich, John Henry	Mount Vernon, N.Y.	129 N. Wash. St
Potter, David Kenneth	Altoona	158 C.
Reiff, Harry Bradford	Collegeville	F.
Rowe, Charles Austin	Roland Park, Md.	363 C.
Semple, Robert Walton	Titusville	129 Chambersburg St.
Semple, Samuel Merrick	Titusville	129 Chambersburg St.
Spangler, Howard Alexander	Gettysburg	112 York St.
Stine, Ralph Edward	York	31 W. Water St.
Stoney, Michael Joseph	Phoenixville	104 P.
Thompson, William Ambrose	Waynesboro	162 C.
Thrusn, Walter Keiffer	Chambersburg	145 S.
Titzel, William Walter	Glenshaw	F.
Weigel, George Brown	Columbia	345 S.
Yarrison, Byron Wordsworth	Montgomery	149 Carlisle St.
		Partial Course 40

STUDENTS IN THE ACADEMY

SUB-FRESHMAN CLASS.

Bell, Jonas Grayson	Big Spring, Md.	423 E.
Blake, Edmond Lawrence	New York, N. Y.	428 E.
Blocher, Chares Huber	Gettysburg	371 Carlisle St.
Buedinger, William Anton	Jersey City, N. J.	318 M.
Bumbaugh, Harry E.	Gettysburg	321 E. Middle St.
Cash, Truman Buckey	Middleburg, Md.	45 S. H.
Epley, Clarence William	Gettysburg	307 York St.
Feiser, Harry Nelson	East Berlin	29 S. H.
Hartman, Samuel Allen	Harrisburg	301 W.
Kattenhorn, Christian Charles	Newark, N. J.	318 M.
Lee, James Carroll	Everett	54 Stevens St.
Lippy, John David, Jr.	Gettysburg	47 Chambersburg St.
Miller, Guy Edward	Newville	407 W.
Miller, Morrell Waldo	Abbottstown	45 S. H.
Miller, Maurice Harry	Gettysburg	80 Steinwehr Ave.
Muhlbach, Walter Frederick	Baltimore, Md.	28 S. H.
Myers, John William	New Oxford	30 S. H.
Neal, Clarence Arthur	Waynesboro	359 C.
Pfeffer, Fred George	Gettysburg	330 Baltimore St.
Putman Dwight Frederick	Somerset	48 Stevens St.
Schmuck, Reid Michael	Hanover	24 S. H.
Shaulis, Earl Frederick	Somerset	48 Stevens St.
Slaybaugh John Ellsworth	Gettysburg	123 Springs Ave.
Snively, Robert Mathias	Hagerstown, Md.	Water St.
Spangler, Jacob Monroe	East Berlin	29 S. H.
Stuempfle, Herman Gustav	Williamsport	23 S. H.
Williams, Emory Ray	Gettysburg	248 York St.
Worley, William Carson	Lititz	34 S. H.
	Sub-Freshmen	28

UPPER MIDDLE CLASS.

Bigham, Charles Andrew	Gettysburg	R. R. 4
Boyer, Merle Xerxes	Chicago, Ill.	213 Springs Ave.
Cable, Glen Elza	Boswell	46 H. S.
Cook, Roderick Walker	Dillsburg	38 S. H.
Endres, Joseph Earl	Huntingburg	41 S. H.
Frontz, Maurice Clinton	Huntingdon	38 S. H.
Gardner, Glen Markley	Gettysburg	303 N. Stratton St.
Gearhart, James Harvey	Blue Ridge Summit, B. R.	Summit
Hill, Melvin Wilber	Gettysburg	225 York St.
Hill, Walter Henry	Muncy	38 S. H.
Hesser, Harvey Allan	Pine Grove	39 S. H.
Hollinger, Charles Raymond	Gettysburg	E. Middle St.
Jones, Eli Herbert	Pittsburgh	39 S. H.

Keim, James Franklin	Boswell	46 S. H.
Kopp, Frank Gerald	York	43 S. H.
Lee, Raymond Elvin	Everett	54 Stevens St.
Little, John Harold	Hanover	41 S. H.
Myers, Charles Jefferson	Gettysburg	136 Chambersburg St.
Neely, Sarah Cassatt	Gettysburg	71 Lincoln Ave.
Rudisill, John Calvin	Gettysburg	44 S. H.
Schroder, Grace Irene	Gettysburg	253 Baltimore St.
Schwartz, Charles William	Port Carbon	224 F.
Shaulis, Samuel Sylvester	Somerset	48 Stevens St.
Slanker, Harry Washington	Gordon	224 E
Warner, Charles Anderson	Blue Ridge Summit	B. R. Summit
		Upper Middlers 25

LOWER MIDDLE CLASS.

Bevan, Reginald Maroable	Paterson, N. J.	24 S. H.
Buehler, Guyon Edwards	Gettysburg	249 Carlisle St.
Buenner, Arthur Rainger	Gettysburg	249 Carlisle St.
Eberman, Theodore Elmer	Baltimore, Md.	33 S. H.
Eckert, William Edward	Gettysburg	R. R. 9
Gangwisch, Victor	Gettysburg	Baltimore St.
Huber, Elizabeth Annan	Gettysburg	411 Carlisle St.
Lawver, Ray Dill	Biglerville	33 S. H.
Papendick, Karl Lewis	Eden, Md.	23 S. H.
Plank, Clyde Anthony	Table Rock	Table Rock
Shumaker, Stella Barton	Harrisburg	163 Carlisle St.
Warner, Laurean Horine	Blue Ridge Summit	B. R. Summit
Weiser, John Monroe	Gettysburg	46 E. Middle St.
Wisler, Jay Luther	Gettysburg	125 N. Stratton St.
		Lower Middlers 14

JUNIOR CLASS.

1915 STUDENTS.*

Bittinger, Albert Earl	Somerset	168 Carlisle St.
Jacobs, Norman Gephart	Somerset	168 Carlisle St.
Sieber, William Thomas	McAllisterville	41 S. H.
		1915 Students 3
Total in Academy		70

*Entered after publication of 1914—1915 Catalogue.

SUMMARY.

Number of Students in College 1915-1916.

Graduates	8
Seniors	68
Juniors	63
Sophomores	76
Freshmen	124
Partial Course	40
<hr/>	
Collegiate Department	379
Academy	70
<hr/>	
Total	449
Deduct Names Repeated	2
<hr/>	
Total	447

COMMENCEMENT 1915

Salutatory.

John Henry Leader Trout

Commencement Orators.

Dean Talcott Williams, Litt.D., LL.D., New York, N. Y.

President John Henry MacCracken, Ph.D., LL.D., Easton, Pa.

Valedictory.

Charles Gruber

GRADUATES.

Bachelor of Arts.

Baker, Charles Wolf	Janke, Otto Karl Ferdinand
Bayly, Mary Louise ✓	Keefauver, Lloyd Conover
Bittle, Thomas Clifford	Kulp, Benjamin Frank
Brumbaugh, Ruth Marguerite ✓	Lotz, James Milton
Burford, Ann Elizabeth Irene ✓	McSherry, Hubert Luther
Bussard, John Franklin	Miller, Mahlon Steck
Butt, John	Miller, Viola Elizabeth ✓
Cessna, Charles Paul	Mock, Robert Emery
Cree, William Herman	Nixon, Thomas Hay
Crider, Paul Mower	Quay, Paul William
Day, William Charles	Rudisill, Nina Viola
Derr, Benjamin Franklin, Jr.	Shank, William Raymond
Dreibelbis, Carl Cheston	Sieber, Helen Evangeline ✓
Eyler, Edgar Josiah	Taylor, Amos Eli
Gable, Frank Dean	Trout, John Henry Leader
Garns, Robert Edward	Tudor, Virginia Townsend ✓
Gruber, Charles	Wagner, John Robert
Hashinger, William Roy	Wagner, Paul Schleppy
Hollinger, Archie Reed	Wickersham, Frank Brewster
Ikeler, Donald Fisher	Wright, Homer Charles

Bachelor of Science.

Arnold, Thomas Gephart	Liebensberger, Stephen Henry
Book, George Nieman	Lotz, Paul Lange
Fisher, Owen Lamont	Musselman, Luther Kyner
Folk, Edwin Luther	Philson, Robert, Jr.
Geesey, Adam F., Jr.	Schrack, Lloyd Ernest
Hesse, William Nelson	Shook, Clarence Raymond
Hollinger, Jacob Edward, Jr.	Smith, Winfred Wenner
Houser, John Grover	Thompson, Charles Herbert
Kelly, James Franklin	Weidner, Harvey Samuel

ADVANCED DEGREES.

Master of Arts.

Iris Audrey MacdonaldGettysburg, Pa.

HONORS AND PRIZES.

GENERAL FINAL HONORS.

Charles Gruber

HIGHEST CLASS HONORS.

Senior.

Charles Gruber.

Junior.

Ottis H. Rechard, Jr.

CLASS HONORS.

Senior.

Paul S. Wagner.

Sophomore.

Henry Etter Starr

Freshmen.

Harold L. Creager	Helen N. Musselman
Frederick R. Knubel	Ralph E. Harbold
Herbert F. Wilshusen	

HASSLER PRIZE IN LATIN.

Ottis H. Rechard, Jr.

With Honorable Mention of

Willis S. Hinman

Andrew E. Rudisill

PITTSBURGH PRIZE IN CHEMISTRY.

LeRoy Albert

Grover P. Keckler

With Honorable Mention of

J. Howard Reinecker.

BAUM PRIZE IN MATHEMATICS.

Willis R. Brenneman

Lawrence E. Rost

With Honorable Mention of

Lauran D. Sowers.

BREWER PRIZE IN GREEK.

Willis R. Brenneman

With Honorable Mention of

Charles L. Venable

MUHLENBERG FRESHMAN PRIZE.

Harold L. Creager

Frederick R. Knubel

PRIZES IN DEBATE.**First and Second.**

Chester S. Simonton

John E. Spangler

Will S. Taylor

Third.

Victor W. Bennett

Robert M. Laird

John M. McCollough.

REDDIG PRIZE IN ORATORY.

J. Arthur Yagle

With Honorable Mention of

Ottis H. Rechard, Jr.

HONORARY DEGREES

CONFERRED AT COMMENCEMENT 1915.

Doctor of Divinity.

Rev. S. D. Daugherty.....Philadelphia, Pa.
 Rev. John Calvin Goddard.....Salisbury, Conn.

Doctor of Laws.

President John H. MacCracken, Ph.D.....Easton, Pa.
 Lewis M. Haupt, C.E.....Cynwyd, Pa.
 Dean Shailer Mathews, D.D.....Chicago, Ill.
 Dean Talcott Williams, Litt.D., LL.D.....New York, N. Y.

Doctor of Literature.

Henry E. Harman.....Atlanta, Ga.
 John Reed Scott.....Gettysburg, Pa.

Master of Arts.

Professor C. A. Peterson.....Kenilworth, N. J.

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Application for Admission to Pennsylvania College of Gettysburg, Pa.

To be filled out in the applicant's own handwriting. Use ink and write legibly.

Name in full
 Place of Birth
 Date of birth: Day Month Year
 Home Address: Town
 Street and Number

If a church member, state denomination
 If not, state denomination with which you would naturally affiliate
 Father's, or Guardian's name

His occupation
 His P. O. Address

Name and location of school or schools attended with period of attendance at each:

.....

Candidate desires to enter *

- Group 1 Greek- Latin
 2 Latin- Modern Languages
 3 History- Political Science
 4 Chemistry- Physics
 5 Biology- Pre medical
 * Check Group desired.

- Group 6 Commerce- Finance
 7 Civil Engineering
 8 Municipal (Sanitary) Engineering
 9 Mechanical Engineering
 10 Electrical Engineering

Admission on Certificate

Students of an approved Preparatory or High School may be admitted upon the certificate of the Principal of the school from which they come without examination upon the subjects specified in the certificate.

Certificates from schools not approved will be considered as the merits of each case may warrant.

This certificate should be sent to the Registrar, Pennsylvania College, Gettysburg, Pa., before the first of September, if possible.

Entrance Requirements

The requirements for admission to each of the various Groups amount to the work of a High School with a four year's course. For unconditional admission the student must present fifteen units of high school or preparatory work.

Persons not candidates for a degree may be admitted as "Tutorial Course" students. Such admission will be granted only upon the recommendation of the instructors under whom the student expects to do work.

Group Requirements

The complete requirement of fifteen units for admission to the various Groups is as follows:

Group	1	2	3	4	5	6	7-10
English	3	3	3	3	3	3	3
Mathematics	3	3	3	3	3	3	3
Latin				4	4		
Greek (or German)				3			
German, French, Spanish or Greek							
Latin, German, French, Spanish				1	4	4	2
History							
Additional units	3	3	3	1	5	3	7

*Units. †Two units of each of two Languages.

Note

An Entrance Unit represents the amount of work that may be done in a standard secondary or high school in a year of thirty-six weeks, with five recitation periods of forty-five minutes each, per week.

The Registrar, PENNSYLVANIA COLLEGE, Gettysburg, Pa.

I hereby certify that M

Academy

High School from

19

to

19

was

graduated. He is a person of good moral character and I recommend him as able to carry forward college work.

and was not

Date 19

Principal

DETAILED STATEMENT OF WORK

Passing Grade

Give system of notation

No work done below the High School grade to be recorded upon this certificate

SUBJECT	No. of Weeks	Periods per Week	Length of Period	Grade	SUBJECT	No. of Weeks	Periods per Week	Length of Period	Grade
English					French				
1st year					1st year				
2d year					2d year				
3d year					Spanish				
4th year					1st year				
					2d year				
					History				
					A United States				
					B English				
					C Ancient				
					D Medieval and Modern				
					Ches				
					Geography				
					Physical and Political				
					Commercial				
					Science				
					Chemistry, Recitation				
					Chemistry, Laboratory				
					Physics, Recitation				
					Physics, Laboratory				
					Botany, Recitation				
					Botany, Laboratory				
					Zoology, Recitation				
					Zoology, Laboratory				
					Astronomy				
					Geology				
					General Science				
					Mechanical Drawing				
					Book Keeping				
					Manual Training				
					Shop Work				

*Manual Training and Shop Work not more than half a unit in each case are accepted for admission only in the Engineering Groups.
Commercial Geography and Book Keeping are accepted for admission only in the Commerce Finance Group.

The candidate has been admitted to the

class upon the following terms:

Entrance Credits units; Group; Regular or Partial;

Entrance Conditions

Date 19

signed

Pennsylvania College of Gettysburg Bulletin

Catalog Number

Register for 1916-17

Announcement of Courses for 1917-18

Gettysburg, Pa.

Pennsylvania College of Gettysburg
Founded in 1832

Issued Quarterly

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No. 1

Published by the College

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Congress July 16, 1904

CALENDAR FOR 1916-1917-1918

Session days are indicated by bold-face type.

1916.

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	1	2	1	2	3	4	5	6	7	..	..	..	1	2	3	4	..	..	..	..	..	1	2
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
24	25	26	27	28	29	30	29	30	31	..	..	..	..	26	27	28	29	30	..	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..

1917.

January							February							March							April							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
	1	2	3	4	5	6						1	2	3					1	2	3	1	2	3	4	5	6	7
7	8	9	10	11	12	13	4	5	6	7	8	9	10	4	5	6	7	8	9	10	8	9	10	11	12	13	14	
14	15	16	17	18	19	20	11	12	13	14	15	16	17	11	12	13	14	15	16	17	15	16	17	18	19	20	21	
21	22	23	24	25	26	27	18	19	20	21	22	23	24	18	19	20	21	22	23	24	22	23	24	25	26	27	28	
28	29	30	31	...	...	...	25	26	27	28	...	...	...	25	26	27	28	29	30	31	29	30	...	...	...	...	...
May							June							July							August							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
...	...	1	2	3	4	5	...	...	...	...	...	1	2	1	2	3	4	5	6	7	...	...	...	1	2	3	4
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	
27	28	29	30	31	...	...	24	25	26	27	28	29	30	29	30	31	...	...	...	...	26	27	28	29	30	31	...
September							October							November							December							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
						1	...	1	2	3	4	5	6	...	...	...	...	1	2	3	...	...	...	...	...	1	2
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	
23	24	25	26	27	28	29	28	29	30	31	...	...	...	25	26	27	28	29	30	...	23	24	25	26	27	27	29
30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30	31	...	...	...	...	...

1918.

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	...	...	1	2	3	4	...	...	...	...	...	1	2	...	...	...	...	1	2	...	...	1	2	3	4	5	6
6	7	8	9	10	11	12	3	4	5	6	7	8	9	3	4	5	6	7	8	9	7	8	9	10	11	12	13
13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16	14	15	16	17	18	19	20
20	21	22	23	24	25	26	17	18	19	20	21	22	23	17	18	19	20	21	22	23	21	22	23	24	25	26	27
27	28	29	30	31	...	...	24	25	26	27	28	...	...	24	25	26	27	28	29	30	28	29	30	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	31	...	...	...	...	...	...	...	...	...	...	...	...	...
May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	...	...	1	2	3	4	...	...	...	...	...	1	...	...	1	2	3	4	5	6	...	...	...	1	2	3	...
5	6	7	8	9	10	11	2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
12	13	14	15	16	17	18	9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
19	20	21	22	23	24	25	16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
26	27	28	29	30	31	...	23	24	25	26	27	28	29	28	29	30	31	...	...	...	25	26	27	28	29	30	31
...	...	...	...	...	...	...	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

COLLEGE CALENDAR—1916-1917-1918

1916.

September 18, 19. Monday and Tuesday, Entrance Examinations.
 September 20.... Wednesday, 11 A. M., College Year begins.
 September 20.... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 30.... Thanksgiving Day. Holiday.
 December 20.... Wednesday, Noon. Christmas Recess begins.
 December 28.... Thursday, 1.30 P. M., Mid-Winter Meeting of Board of Trustees in Harrisburg.

1917.

January 3..... Wednesday, 1 P. M., Christmas Recess ends.
 January 29 to } Monday to Saturday, Examinations closing First
 February 3..... } Semester.
 February 3..... Saturday, Noon, First Semester ends and Second Semester begins.
 February 22.... Washington's Birthday. Holiday.
 April 4..... Wednesday, Noon, Easter Recess begins.
 April 7..... Saturday, Founders' Day.
 April 11..... Wednesday, 8 A. M., Easter Recess ends.
 May 22..... Tuesday, Latin Examination for Hassler Prize.
 May 28 to } Monday to Friday, Senior Final Examinations.
 June 1..... }
 May 29 to } Tuesday to Monday, General Final Examinations.
 June 11..... }
 June 10..... Sunday, 10.45 A. M., Baccalaureate Sermon.
 June 10..... Sunday, 7 P. M., Discourse before Y. M. C. A.
 June 11..... Monday, 8 P. M., Concert by Combined Musical Clubs in Brua Chapel.
 June 11, 12..... Monday and Tuesday, Entrance Examinations.
 June 12..... Tuesday, 9 A. M., Annual Meeting of Board of Trustees in Gettysburg.
 June 12..... Tuesday, 10 A. M., Senior Class Day Exercises.
 June 12..... Tuesday, 3 P. M., Alumni Class Reunions.
 June 12..... Tuesday, 4 P. M., Baseball Game on Nixon Field.
 June 12..... Tuesday, 8 P. M., Reformation Celebration.
 June 13..... Wednesday, 10 A. M., Commencement Exercises.
 June 13..... Wednesday, Noon, Alumni Collation and Annual Meeting of Alumni Association.

Summer Vacation.

August 28..... Tuesday, 8 A. M., Course in Surveying begins.
 September 17, 18. Monday and Tuesday, Entrance Examinations.
 September 19.... Wednesday, 11 A. M., College Year begins.
 September 19.... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 29.... Thanksgiving Day. Holiday.
 December 19.... Wednesday, Noon, Christmas Recess begins.
 December 28.... Friday, 1.30 P. M., Mid-Winter Meeting of Board of Trustees in Harrisburg.

1918

January 3..... Thursday, 1 P. M., Christmas Recess ends.
 January 28 to } Monday to Saturday, Examinations closing First
 February 2.... } Semester.
 February 2..... Saturday, Noon, First Semester ends and Second Semester begins.
 March 28..... Thursday, Noon, Easter Recess begins.
 April 3..... Wednesday, 8 A. M. Easter Recess ends.
 June 12..... Wednesday, Commencement.

HISTORICAL.

The Charter of Pennsylvania College was approved April 7, 1832. The opening paragraphs are as follows:

"WHEREAS, the literary and scientific institution in Gettysburg, Adams county, in this Commonwealth, known by the name of Gettysburg Gymnasium, is resorted to by a large number of young men from different portions of this State, and elsewhere, and promises to exert a salutary influence in advancing the cause of liberal education, particularly among the German portion of our fellow citizens; therefore,

"SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the Gettysburg Gymnasium be, and hereby is erected into a College, for the education of youth in the learned languages, the arts, sciences and useful literature.

"SECTION 2. And be it further enacted by the authority aforesaid, That the style and title of said College shall be 'Pennsylvania College of Gettysburg' and that it shall be under the management, direction and government of all the subscribers to the funds of said institution, by whose private contributions the said funds have been raised and its present edifice purchased, to wit: John B. McPherson, Thomas C. Miller, Thomas J. Cooper, Samuel Fahnestock, Samuel S. Schmucker, Ernest L. Hazelius, David F. Schaeffer, John G. Morris, Benjamin Kurtz, William Heim, Charles P. Krauth, Frederick D. Schaeffer, J. George Schmucker, J. F. Heyer, Jacob Martin, Abraham Reck, William Ernst, Jacob Medtard, Lewis Eichelberger, Michael Meyerheffer, Jonathan Ruthrauff, Jacob Crigler, John F. Macfarlane, Robert Goodloe

Harper, John Herbst, and their successors, to be elected as hereinafter mentioned."

In SECTION 4 we read: "And at elections either for patrons, or trustees, or teachers, or other officers, and in the reception of pupils, no person shall be rejected on account of his conscientious persuasion in matters of religion, provided he shall demean himself in a sober manner, and conform to the rules and regulations of the College."

Two unique features in the establishment of colleges appear in the foundation of this College. First, the College in a large measure grew out of the necessity of properly preparing men for the Theological Seminary, established in 1826 at Gettysburg. This purpose has never lessened, and to-day the institution regards this as an important feature of its work and offers special opportunities to young men preparing themselves for theological studies. Pennsylvania College in its beginnings, its history, and its purpose is closely identified with the Lutheran Church.

The other feature is thus stated in the charter:

"In addition to the customary professorships in other colleges, there shall be in this institution a German professorship, the incumbent of which shall, in addition to such other duties as may be assigned him by the board, instruct such young men as may resort to the institution for the purpose of becoming qualified to be teachers of those primary schools, in which according to the Act passed last session, both German and English are to be taught."

While for a number of years there has been no demand for the teaching of German in elementary schools, the College has given prominence to instruction in the German language and literature and has made a specialty of preparation for the teaching profession. Thus in the foundation of the College the demands of the times were carefully considered, and ever since the aim has been to meet the special educational needs of our people.

Among the founders of the College special mention should be made of S. S. Schmucker, D.D., Professor in the Theological Seminary at Gettysburg, who was the directing spirit in changing the Gettysburg Gymnasium into a College and who presided unofficially over the College for two years. In the State Legislature were a number of friends of the College, prominent among them being Thaddeus Stevens, the father of the public school system of Pennsylvania. Several appropriations were made to the College by the Legislature. This money was spent in the erection of the building known as Pennsylvania Hall.

The College began without endowment, with one small building (now a residence on the south-east corner of Washington and High streets), and a small attendance. But the wholesome enthusiasm of its able instructors, the loyalty and self-sacrifice of its officers, students, and alumni, and the devotion of its friends, have made its history down to the very present one of steady and continuous growth. To-day Pennsylvania College is rated as a college of the highest grade by the United States Bureau of Education and the New York State Board of Regents. Her graduates are admitted to all graduate and professional schools without examination.

Following is a list of the Presidents of the College from its foundation to the present time:

1832-34, Samuel S. Schmucker, D.D., Founder.

1834-50, Charles Philip Krauth, D.D., First President.

1850-68, Henry L. Baugher, D.D., Second President.

1868-84, Milton Valentine, D.D., LL.D., Third President.

1884-04, Harvey W. McKnight, D.D., LL.D., Fourth President.

1904-10, Samuel G. Hefelbower, Ph.D., D.D., Fifth President.

1910-, William A. Granville, Ph.D., LL.D., Sixth President.

LOCATION.

Gettysburg is situated in the beautiful rolling area of the red shale belt of Pennsylvania, with its ridges of intrusive rock. A few miles west is the South Mountain ridge of the Blue Mountains. The situation is healthful, and there is a good supply of filtered water. The town is readily reached from all directions by the Philadelphia & Reading and the Western Maryland Railways, which connect at Harrisburg, Pa., and Baltimore, Md., with the great railway systems of Pennsylvania and the South. Washington, Baltimore, Harrisburg, York, Hagerstown, Chambersburg, Carlisle, and other important centers are also connected with Gettysburg by unusually good roads, making it a very important automobile tourist center. The Coast to Coast Lincoln Way passes through Gettysburg.

The historic association of Gettysburg with the Civil War gives the locality great additional interest. The events of the Battle of Gettysburg are recorded in inscriptions on about fourteen hundred monuments and one thousand markers, many of these being of large size and of great artistic merit. The United States Battlefield Commission has made the field accessible by over forty miles of very fine avenues, along which are the markings that show the battle lines. Miles of the rifle pits and other intrenchments have been preserved, as well as scores of lunettes. Here also is the National Cemetery, where Lincoln made his memorable dedicatory speech. Among the thousands of travelers visiting the field are many men of national prominence who often speak to the student body. Such surroundings develop a love of our united country and inspire to better citizenship.

The college buildings were all used as hospitals during and after the Battle of Gettysburg; and the Fiftieth Anniversary of the Battle of Gettysburg Commission had its headquarters on the campus, July 1-4, 1913.

BOARD OF TRUSTEES

Elected.

1873.	HON. GEORGE RYNEAL, JR.....	Martinsburg, W. Va.
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1902.	CHARLES BAUM, M.D., PH.D.....	Philadelphia
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1907.	HON. R. WILLIAM BREAM.....	Gettysburg
1907.	FREDERICK H. BLOOMHARDT, M.D.....	Altoona
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1908.	JOHN F. DAPP.....	Harrisburg
1908.	GEORGE B. KUNKEL, M.D.....	Harrisburg
1908.	JACOB A. CLUTZ, D.D.....	Gettysburg
1910.	WILLIAM A. GRANVILLE, PH.D., LL.D.	Gettysburg
1910.	CHARLES J. FITE.....	Pittsburgh
1910.	BURTON F. BLOUGH.....	Harrisburg
1912.	CHARLES H. BOYER.....	Chicago, Ill.
1912.	WINSLOW S. PIERCE, ESQ.....	New York, N. Y.
1914.	FREDERICK H. KNUBEL, D.D.....	New York, N. Y.
1913.	HON. LUTHER A. BREWER.....	Cedar Rapids, Ia.
1914.	PERCY D. HOOVER, M.D.....	Waynesboro
1915.	LESLIE M. KAUFFMAN, M.D.....	Kauffman's
1915.	HARVEY C. MILLER.....	Philadelphia
1916.	HON. J. FRANCIS GRAFF	Worthington
1916.	JOHN B. MCALLISTER, M.D.....	Harrisburg
1916.	MARION B. KLINE, D.D.....	Altoona

Officers.

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*Designated as Alumni Trustees, having been elected on nomination by the Alumni Association.

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	Term Expires
MARTIN H. BUEHLER, Chairman.....	1920
THOMAS C. BILLHEIMER, D.D.....	1919
HENRY C. PICKING.....	1918
JACOB A. CLUTZ, D.D.....	1917
WILLIAM L. GLATFELTER.....	1921
JOHN F. DAPP.....	Ex-officio
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THE FACULTY

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President 3 Campus
- REV. PHILIP MELANCHTHON BIKLE, PH.D. (Roanoke), D.D. (Dickinson)145 Lincoln Ave.
Dean and Pearson Professor of Latin
- EDWARD SWOYER BREIDENBAUGH, Sc.D.(Pennsylvania) 227 Carlisle St.
Ockershausen Professor of Chemistry and Mineralogy
- GEORGE DIEHL STAHLEY, A.M., M.D. (Univ. of Pa.)..302 Carlisle St.
Dr. Charles H. Graff Professor of Biology and Hygiene
- REV. CHARLES HENRY HUBER, LITT.D. (Pennsylvania) 411 Carlisle St.
Headmaster and Professor of Latin in Gettysburg Academy
- KARL JOSEF GRIMM, Ph.D. (Johns Hopkins).....228 Carlisle St.
Professor of German
- REV. CHARLES FINLEY SANDERS, D.D. (Lafayette).....125 Broadway
William Bittinger Professor of Philosophy and Education
- LOUIS ALEXANDER PARSONS, Ph.D. (Johns Hopkins) 263 Springs Ave.
Professor of Physics
- STEPHEN REMINGTON WING, M.E. (Cornell).....213 Springs Ave.
Professor of Electrical and Mechanical Engineering
- CHESTER ALLEN, C.E. (Mass. Inst. of Technology)....19 W. High St.
Burton F. Blough Professor of Civil Engineering
- JOHN H. ASHWORTH, PH.D. (Johns Hopkins).....159 Broadway
Professor of Economics and Political Science
- REV. MILTON H. VALENTINE, D.D. (Pennsylvania)..143 Springs Ave.
Amanda Rupert Strong Professor of English Bible and
Professor of History
- SIVERT NIELSEN HAGEN, PH.D. (Johns Hopkins).....204 Carlisle St.
Graeff Professor of English
- JOHN KENYON LAMOND, PH.D. (Yale).....115 Broadway
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Professor of the Romance Languages
- MAJOR FRANK LEE GRAHAM, U. S. Army.....143 Springs Ave.
Professor of Military Science and Tactics
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Acting Franklin Professor of Greek
- CLYDE BELL STOVER, A.M. (Pennsylvania).....24 E. Lincoln St.
Assistant Professor of Chemistry
- JAMES ALLEN DICKSON, A.M. (Pennsylvania)..149 Chambersburg St.
Instructor in Chemistry
- GEORGE WESLEY WHITING, A.M. (Harvard).....143 Springs Ave.
Instructor in English

ARTHUR O. GROFF, A.M. (Michigan).....	133 N. Washington St.
Instructor in Modern Languages	
PAUL SNYDER CREAGER, A.B.....	248 Baltimore St.
Instructor in Physics	
DONALD FISHER IKELER, A.B.....	311 Washington St.
Instructor in Public Speaking and Debating	
ROBERT N. BERRYMAN, B.S.....	Room 121 Athletic Field House
Assistant in Engineering	
CHARLES PAUL CESSNA, A.B.....	19 West High St.
Assistant in Physics	
OTTIS HOWARD RECHARD, A.B.....	East Water St.
Assistant in Mathematics	
WILL SENTMAN TAYLOR, B.S.....	19 E. High St.
Assistant in History and Philosophy	
HERBERT B. MOYER, PH.D.	28 E. High St.
Lecturer on Educational Topics	
HENRY WOLF BIKLE, A.M., LL.B.....	Philadelphia
Lecturer on Constitutional Law	
WILLIAM ADAMS BROWN, D.D., LL.D.....	New York
Stuckenberg Lecturer on Sociology	
DOYLE REVERE LEATHERS, B.S.....	Room 314 G. A.
Senior Master and Instructor in Mathematics in Gettysburg Academy	
JOHN SPANGLER NICHOLAS, B.S.....	Room 306 G. A.
Assistant in College Biology and Master in English and History in Gettysburg Academy	
LEWIS NEIFFER SNYDER, A.B.....	Room 317 G. A.
Master in German in Gettysburg Academy	
CHARLES GRUBER, A.B.....	Room 204 G. A.
Master in Greek and History in Gettysburg Academy	
VICTOR WILSON BENNETT	Room 360 McK.
Student Assistant in Accounting	
FRIEDA BERTHA BAUSCH.....	228 Carlisle St.
Student Assistant in German	
ALBERT HENDERSON ZEILINGER.....	Room 410 P.
Student Assistant in Chemistry Laboratory	
ROBERT WAREHAM FLENNER	Room 417 P.
Student Assistant in Chemistry Laboratory	
DAVID ELIAS MAXWELL	Room 401 P.
Student Assistant in Physics Laboratory	
BERNARD GEHAUF	Room 357 C.
Student Assistant in Physics Laboratory	
PAUL ERNEST STERMER	Room 201 P.
Student Assistant in Drawing	
ARTHUR KENNETH STERMER.....	Room 342 McK.
Student Assistant in Drawing	
JAMES VERNON CANNEN	Room 219 P.
Student Assistant in Drawing	

ADDITIONAL OFFICERS AND EMPLOYEES.

EDWARD SWOYER BREIDENBAUGH, Sc.D.....	227 Carlisle St.
Curator of Museum	
KARL JOSEF GRIMM, Ph.D.....	228 Carlisle St.
Librarian	
REV. MILTON H. VALENTINE, D.D.....	143 Springs Ave.
Chaplain	
REV. SAMUEL FRANKLIN SNYDER, A.M.....	Stevens St.
Assistant to the President	
HENRY C. PICKING, A.M.....	Office, 16 Center Square
Treasurer	
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Registrar and Secretary of the Faculty	
DOYLE REVERE LEATHERS, B.S.....	Room 314 G. A.
Athletic Director	
MISS SALLIE P. KRAUTH	3 Baltimore St.
Assistant Librarian	
MISS MARY HAY HIMES, A.M.....	130 Carlisle St.
Assistant Librarian	
MISS RACHEL GRANVILLE	3 Campus
Secretary to the President	
PAUL SCHLEPPY WAGNER, A.B.....	38 Seminary
College Y. M. C. A. Secretary	
MISS FRANCES MARKS FRITCHEY, A.B.....	Lincoln Ave.
Preceptress in Gettysburg Academy	
JOHN REIGLE EMBICK	Room 412 P.
Assistant Curator of Museum	
SERGEANT DERWOOD T. ALLEN. U. S. Army	Stevens Hall
Assistant in Military Science and Tactics	
ROBERT N. BERRYMAN, B.S.....	Room 121 Athletic Field House
Football Coach	
IRA PLANK	Gettysburg
Baseball Coach	
NORMAN WILBUR KUNKEL	Room 211 P.
Proctor in Pennsylvania Hall	
LAWRENCE EUGENE ROST	Room 337 McK.
Proctor in McKnight Hall	
GEORGE WILLIAM SCHILLINGER	Room 260 C.
Proctor in Cottage Hall	
PAUL WILLIAM NEU, B.S.....	Room 16 Stevens Hall
Proctor in Thaddeus Stevens Hall	
ALBERT HENDERSON ZEILINGER	Room 410 P.
Assistant Proctor in Pennsylvania Hall	
CHESTER TRAVER HALLENBECK	Room 124 P.
Custodian of Reading Room	
JOHN B. HAMILTON.....	128 Washington St.
Superintendent of Buildings and Grounds	
JOHN C. HAMILTON	205 Buford Ave.
Engineer and Watchman	

AUGUST E. AUMEN	York St.
Fireman and Watchman	
MRS. MARY D. MENCHEY	12 South St.
Janitress	
MRS. CARRIE PITTENTURF	12 South St.
Janitress	
MRS. AMOS DELAP	Gettysburg Academy
Stewardess in Gettysburg Academy	
S. FRANKLIN WETZEL	48 Stevens St.
Janitor in Gettysburg Academy	
MRS. S. FRANKLIN WETZEL	48 Stevens St.
Matron in Gettysburg Academy	
JOSEPH CARVER.....	4 Campus
Janitor	
MERVE CARVER	4 Campus
Janitor	

COMMITTEES OF THE FACULTY.

Class Advisers.

PROFESSOR STAHLEY, Senior Class
 PROFESSOR SANDERS, Junior Class
 PROFESSOR PARSONS, Sophomore Class
 PROFESSOR BREIDENBAUGH, Freshman Class

Entrance.

BIKLE, GRIMM, LAMOND.

Library.

GRIMM, GRANVILLE.

Bulletin.

HAGEN, PARSONS, ASHWORTH, BARNEY,
 GRANVILLE, Ex-officio.

Hour Schedule.

BREIDENBAUGH, GRIMM.

Students' Publications.

HAGEN, GRIMM, BIKLE.

Supervision of Finance of Students' Publications.

BIKLE, BREIDENBAUGH, SANDERS.

College Discipline.

BIKLE, STAHLEY, VALENTINE, SANDERS, ASHWORTH.

Lectures.

BIKLE, ASHWORTH.

PENNSYLVANIA COLLEGE

Advanced Degrees.

GRIMM, BIKLE, STAHLEY.

Representative on Athletic Council.

LAMOND.

Supervision of Social Functions.

ALLEN, BIKLE.

Supervision of Musical Clubs.

ALLEN.

Student Employment.

GRANVILLE, BIKLE.

Student Organizations.

BREIDENBAUGH, WING, BARNEY.

Dormitory Rooms.

BARNEY, PICKING, STOVER.

ATHLETIC COUNCIL.

JOHN K. LAMOND, Faculty Representative, President.

DOYLE REVERE LEATHERS, '13, Athletic Director, Vice-President.

SAMUEL F. SNYDER, '09, Graduate Athletic Manager, Secretary.

ARTHUR E. RICE, '04, Alumni Representative, Treasurer.

JAMES A. DICKSON, '05, Alumni Representative.

FRANK B. WILLIAMS, '17, Student Representative.

WILLIAM C. CAMPBELL, '17, Ex-officio, President of the College Athletic Association.

JOHN F. DAPP, ex-'89, Ex-officio, President of the Board of Trustees.

WILLIAM A. GRANVILLE, Ex-officio, President of the College.

STUDENT COUNCIL 1916-1917.

A. RAYMOND CARLSON, '17, President.

JOHN M. MCCOLLOUGH, '18, Vice-President.

HENRY E. STARR, '17, Corresponding Secretary.

NELSON F. FISHER, '18, Recording Secretary.

FRANK B. WILLIAMS, '17, Treasurer.

W. CLIFFORD CAMPBELL, '17.

LUTHER A. GOTWALD, '18.

LOWELL V. SIMPSON, '19.

DONALD F. LYBARGER, '19.

HARRY W. SLANKER, '20.

ADMISSION.

Applicants for admission are required to present evidence of a good moral character. Students coming from other schools must present certificates of good standing and regular dismissal from the institutions which they have left. No distinctions are made as to sex, except that only male students are admitted to the college dormitories. Women students may secure first-class accommodations in the town with good families and at very reasonable rates by writing to the Registrar.

METHOD OF ADMISSION.

The method of admission is either by examinations or by certificates from approved secondary and high schools or from private instructors. Such certificates should state the amount of work done and the time spent on each subject, together with the grades received. *The official forms for certificates,** which may be had on application to the Registrar, *should be used in all cases*, in order to insure the presentation of the necessary information for the Entrance Committee which passes on all applications for admission. These certificates should be filled out and returned to the Registrar as early as possible before the opening of the college year. Entrance examinations are held on the Monday and Tuesday preceding the opening of the college year and on the Monday and Tuesday of Commencement Week.

REGISTRATION.

Every student who registers at Pennsylvania College should call on the Registrar before or at the opening of College, pay the Registration Fee of \$5.00, be informed as to the action of the Entrance Committee, receive registration blanks, and be instructed in the manner of filling

* A copy of this blank has been bound into this Bulletin inside of the front cover for the convenience of applicants. Detach it along the perforations, fill it out and send it to the Registrar.

them out. He should arrange his course of study under the guidance of his Group Adviser. He should also submit his schedule of studies, properly endorsed by the Group Adviser, to the Registrar within one week from the opening of College.

REQUIREMENTS FOR ADMISSION.

The scholarship requirement for admission to the Freshman Class is thoro preparation in fifteen units of work in an approved secondary school. A *unit* of work in any subject is the amount of work that may be done in a standard secondary school in a year of thirty-six weeks, with five recitation periods of forty-five minutes each, per week.

PRESCRIBED SUBJECTS FOR ADMISSION.

Of these fifteen units required for admission, the following *five and a half* are required of all candidates:

English	3* units
Mathematics	
A. Algebra	1½ units
B. Plane Geometry	1 unit

ELECTIVE SUBJECTS FOR ADMISSION.

To make up the total of fifteen units the candidate for admission may offer any of the following (under the conditions stated in connection with each Group of College studies, pages 26-57) :

Greek.

- | | |
|---|----------|
| A. Grammar and four books of Xenophon..... | 2 units. |
| B. Composition, three books of Homer, and sight translation | 1 unit. |

Latin.

- | | |
|--|----------|
| A. Grammar and four books of Caesar | 2 units. |
| B. Composition and six books of Cicero | 1 unit. |
| C. Six books of Vergil | 1 unit. |

German.

- | | |
|--------------------------|---------------|
| Two or three years | 2 or 3 units. |
|--------------------------|---------------|

* As the first English work in the high school or preparatory school course is largely grammar, the credit granted in English is one unit less than the number of years of work in this subject.

French.

Two years2 units.

Spanish.

Two years2 units.

Mathematics.C. Solid Geometry $\frac{1}{2}$ unit.D. Plane Trigonometry $\frac{1}{2}$ unit.**Mechanical Drawing.**One year $\frac{1}{2}$ or 1 unit.**History.**United States $\frac{1}{2}$ or 1 unit.England $\frac{1}{2}$ or 1 unit.Ancient $\frac{1}{2}$ or 1 unit.Medieval $\frac{1}{2}$ or 1 unit.**Geography, Political and Physical** $\frac{1}{2}$ or 1 unit.**Chemistry.**

One year with laboratory work1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**Physics.**

One year with laboratory work1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**Botany.**

One year with laboratory work1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**Zoölogy.**

One year with laboratory work1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**ADDITIONAL SUBJECTS.**

Certificates will be accepted in Civics, Astronomy, Geology and General Science; also in Commercial Geography and Bookkeeping when offered for admission to the Commerce-Finance Group; also in Manual Training and Shop Work (to count not more than half a unit in each case) when offered for admission to any of the Engineering Groups.

DEFICIENCY IN ADMISSION.

To receive the full advantages of a college course a student must have a thoro entrance preparation. Those who are insufficiently prepared for the class they enter

do not generally make satisfactory progress in their work. Fifteen units of entrance work are required for unconditional admission to the College; but students who lack not more than two units of entrance requirements of any group may register as conditioned freshmen. In such cases the entrance deficiency must be satisfied by enrollment in the Gettysburg Academy or under an approved tutor. Such enrollment must take place at the time of registration in the College. Work thus done in satisfying an entrance deficiency does not give College credit, but does count as part of the current work of the student in estimating the number of hours in which he may be enrolled.

ADMISSION TO ADVANCED STANDING.

A candidate for advanced standing must satisfy the entrance requirements and in addition must submit evidence of the satisfactory character of the work for which advanced credit is asked.

No one is admitted to the College after the beginning of the Senior year except by special action of the Faculty.

PARTIAL COURSE STUDENTS.

Persons so situated that they are not able or do not wish to pursue a course of study leading to a degree, are admitted as partial course students in such subjects as examination may show they are prepared to pursue with advantage. Such students are required to offer for entrance not less than eleven units of preparatory work, and their weekly schedule must include not less than twenty-eight semester hours.

SPECIAL STUDENTS.

Students of the Theological Seminary are admitted to one or more courses in the College.

The Faculty may also admit to one or more courses such applicants as have special qualifications for the subjects they desire to pursue.

ADMISSION SUBJECTS IN DETAIL.

ENGLISH.

In English the study of the following books, recommended by the National Conference on Uniform Entrance Requirements. This is required for 1917-1918.

A. Reasonable familiarity with the substance of the work:

The following are preferred, tho any of the alternatives specified in the Uniform Entrance Requirements for 1915-1919 are accepted:

Shakespeare's "Merchant of Venice" and "Julius Caesar"; Addison's "Sir Roger de Coverley Papers"; Goldsmith's "Deserted Village"; Scott's "Ivanhoe" and "Lady of the Lake"; George Eliot's "Silas Marner"; Irving's "Sketch Book"; Tennyson's "Gareth and Lynette," "Lancelot and Elaine," and "Passing of Arthur"; Ruskin's "Sesame and Lilies."

B. More careful and specific study:

Shakespeare's "Macbeth"; Milton's "Lycidas"; "Comus," "L'Allegro," and "Il Penseroso"; Washington's "Farewell Address"; Webster's "First Bunker Hill Oration"; Carlyle's "Essay on Burns."

The examination will be in two parts,—one of questions on grammar, rhetoric, and composition, the other of questions on the literature specified above.

In the first part, candidates will be asked specific questions and given particular exercises in word-choice, sentence structure, the principles of paragraphing, and other such matters as a student seeking college standing should be proficient in. The examination in literature will require reasonable familiarity with the books and the authors mentioned under "A" above (or those accepted in substitution for them); and fairly thoro knowledge and appreciation of the books and the authors named under "B" above.

No candidate will be accepted in English whose work is seriously defective in spelling, punctuation, grammar, choice of words, sentence structure, paragraphing, or other essentials of good usage.

MATHEMATICS.

A. Algebra. The four fundamental operations for rational algebraic expressions; factoring, determination of the highest common factor and least common multiple by factoring; fractions, involution, evolution, radicals, and imaginary quantities. Equations of the first and second degree, ratio and proportion, progressions; binominal theorem for positive integral exponents, and permutations and combinations limited to simple cases.

B. Plane Geometry. Five Books. Demonstration of theorems and constructions, including rectilinear figures, circles, proportional lines, and similar figures; comparison and measurement of surfaces, including triangles, regular polygons, and circles; maxima and minima; originals.

C, D. The entrance requirements in Solid Geometry and Plane Trigonometry are similar to the work done in these subjects in the College course as given on page 81. For advanced standing in Solid Geometry and Trigonometry, candidates must present note-books and other evidence of thoro work.

POLITICAL AND PHYSICAL GEOGRAPHY.

The requirement in Political Geography may be met by the study of any good text-book. The requirement in Physical Geography may be met by the study of any text-book equivalent to Gilbert and Bringham's "Introduction to Physical Geography," Davis' "Elementary Physical Geography," or Tarr's "New Physical Geography."

GREEK.

A1. Grammar. The candidate must have familiarized himself with the essentials of grammar, namely, the inflections of substantives and verbs; the syntax of cases, and the moods and tenses of the verb; the simple rules

for the composition and derivation of words; the structure of sentences, with particular regard to conditional and relative sentences, indirect discourse, and final clauses.

A2. Xenophon. The first four books of "Anabasis."

B1. Prose Composition. The requirements in prose composition involve the ability to translate into idiomatic Greek, continuous narrative based on Xenophon's "Anabasis," Book II, and other Attic prose of similar difficulty. Due regard must be paid to the principles and practice of accentuation.

B2. Homer. The first three books of the "Iliad" (omitting II, 494-end) or of the "Odyssey," including the Homeric forms, constructions, and prosody.

B3. Sight Translation. One of the most important assets which a student can bring to the study of college Greek is the ability to read easily at sight passages of equal difficulty with the "Anabasis" or the "Hellenica." For this purpose he should memorize as a working vocabulary the principal words in Xenophon and the three books of Homer.

(See pages 61 and 62 for Beginners' Greek in College.)

LATIN.

A1. Grammar. Allen and Grenough's preferred.

A2. Caesar's "Gallic War," Books I-IV.

B1. Prose Composition, including the translation of English passages on Caesar and Cicero.

B2. Six Orations of Cicero, including at least two against Catiline, the one for Archias, and the one for the Manilian Law.

C. Vergil's "Aeneid," Books I-VI, and so much prosody as relates to Latin versification in general and the dactylic hexameter in particular.

Equivalents will be accepted for work done in Sallust or Ovid or other authors of equal rank.

GERMAN.

The requirements in German presuppose a systematic course extending over at least two years of school work.

The candidate is expected to be able to pronounce German clearly and distinctly. He must possess an accurate knowledge of the rudiments of grammar, and should have acquired an elementary German vocabulary. He should be able to translate easy prose and poetry, and to put into German simple English sentences taken from the language of every-day life and easy selections from English narrative prose.

FRENCH.

The requirements in French correspond to those in German, and include the ability to pronounce French accurately, to read easy French prose, to put into French simple English sentences taken from the language of every-day life and easy selections from English narrative prose, and a good knowledge of the rudiments of French grammar.

SPANISH.

The requirements in Spanish correspond to those in French.

MECHANICAL DRAWING.

Drawings, accompanied by a certificate from the instructor, must be submitted. One unit credit will be allowed in cases where not less than two hundred hours of work has been devoted to the subject.

HISTORY.

A. *United States.* Montgomery's "Leading Facts of American History," or its equivalent.

B. English. Walker's "Essentials of English History," or its equivalent.

C. Ancient. Myers' "Ancient History," or its equivalent.

D. Medieval and Modern. Myers' "Medieval and Modern History," or its equivalent.

CHEMISTRY.

The candidate should have such knowledge of the general principles of the science and the properties of the more important elements as may be obtained by a careful study of a text-book of the scope of Remsen's "Introduction to the Study of Chemistry, Briefer Course."

The pupil should have performed in the laboratory experiments in number and general character the equivalent of those given in Remsen's "Introduction." The record of this work must be contained in a note-book describing in the pupil's own words the materials used, the apparatus employed (with drawings), the changes occurring, and the resulting products, with the conclusions properly drawn from the phenomena observed.

This note-book must be presented bearing the following endorsement by the instructor: "This note-book is a true and original record of experiments actually performed by — in — school during the year —."

PHYSICS.

A good high school course, using any standard high school text, covering the simple principles of Physics, descriptive and experimental rather than mathematical, including not less than three class periods and two hours of laboratory work a week for one year.

BOTANY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to text-book and laboratory study of this subject with the aid of Bergen's "Essentials of Botany" or some other standard book of equal merit. Drawings and note-books are required.

ZOÖLOGY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to this subject. Davidson's "Practical Zoölogy" or any other standard book of equal grade will be accepted. Note-books and drawings must accompany the certificate.

THE GROUP SYSTEM OF COURSES.

The courses of study in the College are arranged in ten groups. These groups are designed to be of equal value in the mental training of the student. This arrangement accomplishes several purposes. It enables the student to select those subjects which are of special value in preparation for subsequent professional study or business. In the first six groups it provides for a general training and broad culture which requires the student not to specialize but to concentrate a fair proportion of his time and energy on one or two related subjects. This gives a fuller training of the mental powers than results from a more diffused and often aimless selection of studies in a too largely elective system.

In addition to these groups of non-professional courses, groups have been established in Civil, Municipal, Mechanical, and Electrical Engineering.

Each group of studies is described in detail on pages 26 to 57 with entrance requirements for each.

VALUE OF A SEMESTER HOUR OF COLLEGE WORK.

A semester hour of college work consists of the equivalent of one weekly exercise for one semester, either a recitation, a lecture, a laboratory period of two and a half or three hours, or an assignment of equivalent work on which an examination is held. A weekly exercise for one semester consisting of one lecture hour in connection with two laboratory hours counts as one semester hour.

OUTLINE OF GROUPS

GROUP I.—GREEK AND LATIN.

Group Adviser: Professor Biklé.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; Latin A, B, C, 4 units; Greek A, B, 3 units, or German, 3 units; and 2½ elective units.

This Group is especially recommended for its cultural value and as a preliminary training course for those intending to enter the ministerial, legal, medical, journalistic, or teaching profession, and also provides a foundation for advanced language study.

This Group leads to the degree of **Bachelor of Arts**.

The following Schedule of Studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

For optional courses in Military Science and Tactics for two or more years, see pages 96 to 101.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek*: Xenophon (Hellenica) Ly-					
sias,	1*	3	2*	3	61
or Greek*: First Year Greek	A*	3	A*	3	61
Latin: Livy, Horace (Odes), Cicero					
(De Senectute)	1, 2	3	2, 3	3	63
English: English Composition	A	3	A	3	58
History: Political History of Modern					
Europe	1	2	1	2	68
English Bible: General Introduction	1	1	1	1	67
Mathematics: Plane Trigonometry,					
Solid Geometry	1	3	1, 2	3	81
Chemistry: General Chemistry	1	3	1	3	78
Total Semester Hours		18		18	

*Students offering German for admission will take Greek A, and those offering Greek for admission will take Greek 1 and 2.

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek* : Plato (Apology and Crito), Homer (Odyssey), or Greek* : Second Year Greek	3* B*	3 3	4* B*	3 3	61 61
Latin : Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5 B*	3 3	5, 6 B*	3 3	63 59
German* : Elementary German, or German* : Composition, Conversation, Modern Prose	I* I	3 2	I* I	3 2	59 58
English : English and American Literature	I	2	I	2	58
Philosophy : Psychology, Introduction to Philosophy	I	2	2	2	70
Electives :		3		3	
Total Semester Hours		16		16	

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek† : Xenophon (Hellenica), Lysias	I† 2	3 2	2† 2	3 2	61 58
English : Shakespeare					
German : Composition, Conversation, Modern Prose, or German : German Classics, or French : Elementary French	I 2 A	3 3 3	I 2 A	3 3 3	59 60 65
Economics : Principles of Economic Theory	I	3	I	3	73
Christian Evidences :	I	2			68
Philosophy : Logic	3	2			71
Philosophy : Ethics			5	2	71
Physics : Elements of Physics or Physics : General Physics (Mechanics, Sound, and Heat), and Physics† : Laboratory Physics	A I 2†	4 3 1	A I 2†	4 3 1	82 83 83
Electives :		3		5	
Total Semester Hours		16-19		16-19	

*Students offering German for admission will take Greek B and German 1, and those offering Greek for admission will take Greek 3 and 4 and German B, in the Sophomore Year.

†Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

‡In some cases Physics 1 may be taken without Physics 2 (if approved by the Group Adviser and Instructor).

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Greek*: Plato (Apology and Crito), Homer (Odyssey)	3*	3	4*	3	61
Philosophy: History of Philosophy	6	3	6	3	71
Philosophy: Theism			8	2	72
Electives:	9-15		7-13		
It is suggested that these be chosen from the following:					
Latin: Terence, Latin Literature, Roman Law	9, 10	2	10, 11	2	64
Greek: Euripides, Greek History	5	2	6	2	62
Modern Language:	2 or 3		2 or 3		59-66
English: Public Speaking	4	2	4	2	61
History: English History, United States History	2	3	3	3	69
History: The German Empire and its Present Organization, Era of Reformation	4	3	5	3	69, 70
Education: History of Education, Pedagogy	1	3	2	3	72
Education: School Organization and Method of Teaching	3	2			73
Comparative Philology:	1	1	1	1	66
Biology: Personal and Public Hygiene	9	1	9	1	78
Physics: Electricity and Light	3, 4	4	3, 4	4	83
<hr/>					
Total Semester hours	15-18		15-18		

*Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

GROUP II.—LATIN AND MODERN LANGUAGES.

Group Adviser: Professor Grimm.

Entrance Requirements: English, 3 units; Mathematics A, B, 2½ units; Latin A, B, C, 4 units; 2 units of German or French or Spanish or Greek; History, 1 unit; and 2½ elective units.

This Group is recommended for its cultural value and is further well adapted to preparation for the legal or teaching professions or for literary pursuits. The emphasis is laid on Latin and the Modern Languages, and provision is made for those who wish to make a special study of them.

This Group leads to the degree of **Bachelor of Arts**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the Course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

For optional courses in Military Science and Tactics for two or more years, see pages 96 to 101.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	63
German*: Composition, Conversation, Modern Prose,	1*	3	1*	3	59
or German*: Elementary German,	A*	3	A*	3	59
or French*: Elementary French,	A*	3	A*	3	65
or French: Grammar, Composition, Modern Prose	1*	3	1*	2	65
English: English Composition	A	3	A	3	58
History: Political History of Modern Europe	1	2	1	2	68
English Bible: General Introduction	1	1	1	1	67
Mathematics: Plane Trigonometry, Solid Geometry	1	3	1, 2	3	81
Biology: General Biology, Zoölogy	1, 2	3	2, 3	3	76
or Chemistry: General Chemistry,	1	3	1	3	78
or Physics: Elements of Physics,	A	4	A	4	82
or Physics: General Physics (Mechanics, Sound, and Heat),	1	3	1	3	83
and Physics†: Laboratory Physics	2†	1	2†	1	83
Total Semester Hours	18-19		18-19		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	63
German: German Classics,	2	3	2	3	60
or German: Composition, Conversation, Modern Prose	I	3	I	3	59
French: Grammar, Composition, Modern Prose,	I	3	I	3	65
or French: Elementary French	A	3	A	3	65
English: English and American Literature	I	2	I	2	58
Philosophy: Psychology, Introduction to Philosophy	I	2	2	2	70
Electives:		3		3	
Total Semester Hours		16		16	

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Epochs of German Literature,	4	3	4	3	60
or German: German Classics	2	3	2	3	60
French: Nineteenth Century,	2	3	2	3	65
or French: Grammar, Composition, Modern Prose	I	3	I	3	65
English: Shakespeare	2	2	2	2	58
English: English Novel or Anglo-Saxon	3, 4	2	3, 4	2	58, 59
Economics: Principles of Economic Theory	I	3	I	3	73
Christian Evidences:	I	2			68
Philosophy: Ethics			5	2	71
Electives:		I-4		I-4	
Total Semester Hours		16-19		16-19	

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Languages:		6+		6+	59-66
Electives:		9+		9+	
Those looking toward teaching are advised to elect:					
Education: History of Education, Pedagogy	1	3	2	3	72
Education: School Organization and Method of Teaching	3	2			73
Philosophy: Logic	2	2			71
<hr/>					
Total Semester Hours		15-18		15-18	

GROUP III.—HISTORY AND POLITICAL SCIENCE.**Group Adviser:** Professor Valentine.

Entrance Requirements: English, 3 units; Mathematics, A, B, $2\frac{1}{2}$ units; Latin A, B, C, 4 units; 2 units of German or French or Spanish or Greek; History, 2 units; and $1\frac{1}{2}$ elective units.

In this Group emphasis is laid on the historical studies and on Political Science and Economics. The Group is intended to lay the foundations for professional legal studies and to prepare for the teaching of these subjects.

This Group leads to the degree of **Bachelor of Arts**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

For optional courses in Military Science and Tactics for two or more years, see pages 96 to 101.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	63
German*: Composition, Conversation, Modern Prose,	1*	3	1*	3	59
or German*: Elementary German,	A*	3	A*	3	59
or French: Elementary French	A	3	A	3	65
English: English Composition	A	3	A	3	58
History: Political History of Modern Europe	1	2	1	2	68
English Bible: General Introduction	1	1	1	1	67
Mathematics: Plane Trigonometry, Solid Geometry	1	3	1, 2	3	81
Biology: General Biology, Zoölogy,	1, 2	3	2, 3	3	76
or Chemistry: General Chemistry,	1	3	1	3	78
or Physics: Elements of Physics,	A	4	A	4	82
or Physics: General Physics (Mechanics, Sound, and Heat),	1	3	1	3	83
and Physics†: Laboratory Physics	2†	2	2†	1	83
Total Semester Hours	18 or 19		18 or 19		

*Students offering Greek for admission will take German A in the Freshman Year (if electing German); those offering German for admission will take German 1 (or French).

† In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	63, 64
German: German Classics	2	3	2	3	60
or German: Composition, Conversation, Modern Prose,	1	3	1	3	59
or French: Grammar, Composition, Modern Prose,	1	3	1	3	65
or French: Elementary French	A	3	A	3	65
English: English and American Literature	1	2	1	2	58
Political Science: Comparative Government, Political Parties	1	3	2	3	75
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	70
Electives:		3		3	
Total Semester Hours		16		16	

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	58
Economics: Principles of Economic Theory	1	3	1	3	73
Economics†: Labor Problems, Business Organization	7†	3	8†	3	74, 75
or Political Science*: International Law, Constitutional Law	3*	3	4*	3	75
History†: English History, United States History,	2†	3	3†	3	69
or History*: The German Empire and its Present Organization, Era of Reformation	4*	3	5*	3	69, 70
Christian Evidences:	1	2			68
Philosophy: Ethics			5	2	71
Electives:		1-2½		1-2½	
Total Semester Hours		15-18		15-18	

*Given 1916-1917 and alternate years.

†Given 1917-1918 and alternate years.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics †: Labor Problems, Business Organization	7†	3	8†	3	74, 75
or Political Science *: International Law, Constitutional Law	3*	3	3*	3	75
History *: The German Empire and its Present Organization, Era of Reformation,	4*	3	5*	3	69, 70
or History †: English History, United States History	2†	3	3†	3	69
Philosophy †: Sociology	4†	2			71
Electives:	7-10		9-12		
It is suggested that the electives in the Junior and Senior Years be taken from the following:					
Latin: Roman Law	11	1			64
Economics *: Money and Banking, Business Law	2*	3	5*	3	74
Economics: Public Finance	3	3			74
Philosophy: Advanced Logic	9	1			72
Modern Language:	1 or 1½		1 or 1½		59-66
Total Semester Hours	15-18		15-18		

*Given 1916-1917 and alternate years.

†Given 1917-1918 and alternate years.

GROUP IV.—CHEMISTRY AND PHYSICS.**Group Advisers:**

Chemistry Section: Professor Breidenbaugh.

Physics Section: Professor Parsons.

Entrance Requirements: English, 3 units; Mathematics A, B, 2½ units; 2 units of each of two of the following: Latin, German, French, Spanish; and sufficient electives to make a total of 15 units.

In this Group the emphasis is laid on Chemistry and Physics with the requirement that special attention be given to one of these subjects in the Junior and Senior Years. The Group is intended to prepare for teaching these subjects, or for professional studies in these lines or for advanced work in research laboratories in the field of Chemistry and Physics (both scientific and technical), or for manufacturing and commercial pursuits.

Either the Chemistry or Physics section should be selected on entering the Group; however the choice between Chemistry and Physics as the principal subject is not required to be made until the beginning of the Junior Year.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

For optional courses in Military Science and Tactics for two or more years, see pages 96 to 101.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose,	I	3	I	3	59
or German*: Elementary German	A*	3	A*	3	59
Latin: Livy, Horace (Odes), Cicero (De Senectute),	1, 2	3	2, 3	3	63
or French*: Grammar, Composition, Modern Prose,	I*	3	I*	3	65
or French*: Elementary French	A*	3	A*	3	65
English: English Composition	A	3	A	3	58
History: Political History of Modern Europe	I	2	I	2	68
English Bible: General Introduction	I	1	I	1	67
Mathematics: Plane Trigonometry, Solid Geometry	I	3	1, 2	3	81
Chemistry: General Chemistry	I	3	I	3	78
Total Semester Hours		18		18	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: German Classics,	2	3	2	3	60
or German: Composition, Conversation, Modern Prose,	I	3	I	3	59
or French*: Nineteenth Century,	2*	3	2*	3	65
or French*: Grammar, Composition, Modern Prose	I*	3	I*	3	65
English: English and American Literature	I	2	I	2	58
Philosophy: Psychology, Introduction to Philosophy	I	2	2	2	70
Mathematics: Advanced Algebra, Elementary Analysis	3	3	5	3	81
Chemistry: Qualitative Analysis	2	3	2	3	79
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	3	83
Physics: Laboratory Physics	2	1	2	1	83
Total Semester Hours		17		17	

*Students offering German for admission will take German 1 in the Freshman Year; those offering Latin or French without German for admission will take German A. Those offering French for admission will take French 1 (if electing French) others electing French will take French A.

Junior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	58
Economics: Principles of Economic Theory	1	3	1	3	73
Christian Evidences:	1	2			68
Philosophy: Ethics			5	2	71
Chemistry: Quantitative Analysis	3	3	3	3	79
Physics: General Physics (Electricity and Magnetism, and Light)	3	3	3	3	83
Physics: Physical Measurements	4	1	4	1	83
Electives:		2-5		2-5	
Total Semester Hours	16-19		16-19		

Senior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Scientific German	3	3	3	3	60
Chemistry: Organic Chemistry	4	4	4	4	79
Chemistry: Special Quantitative Methods	7	3-5	7	3-5	80
Electives:		3-9		3-9	
Students intending to engage in Chemical work or in teaching Chemistry are advised to elect from the following list:					
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2	80
Geology and Mineralogy: Mineralogy	3	2	3	2	80
French: Scientific French	4	2	4	2	66
German:	2 or 3		2 or 3		60
Spanish: Elementary Spanish		1-3		1-3	66
Education:		3		3	71-72
Total Semester Hours	15-19		15-19		

Junior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	58
Economics: Principles of Economic Theory	1	3	1	3	73
Christian Evidences:	1	2			68
Philosophy: Ethics			5	2	71
Mathematics: Differential and Integral Calculus	6	4	6	4	82
Physics: General Physics (Electricity and Magnetism, and Light)	3	3	3	3	83
Physics: Physical Measurements	4	1-2	4	1-2	83
Electives:		2-5		2-5	
Total Semester Hours	17-21		17-21		

Senior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Scientific German	3	3	3	3	60
Physics: Physics Seminary	11	1	11	1	84
Physics: Advanced Laboratory Physics	10	2	10	2	84
Physics: Recent Advances in Physics,	7	1	7	1	84
or Engineering: Elements of Electrical Engineering	7	2	7	3	88
Physics: Advanced Courses		2-4		2-4	84
Electives:		3-9		3-9	
To those intending to pursue advanced work in Physics it is suggested that electives be chosen from the following:					
Modern Languages:	2 or 3		2 or 3		59-66
Mathematics: Differential Equations	7	3			82
Mathematics: Plane and Solid Analytic Geometry			4	4	81
Physics: Mathematical Physics	8 or 9	2	8 or 9	2	84
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2	80
Biology: General Biology and Zoölogy	1, 2	3	2, 3	3	76
Total Semester Hours	15-18		15-18		

GROUP V.—BIOLOGY, CHEMISTRY, AND PHYSICS.

Group Adviser: Professor Stahley.

Entrance Requirements: English, 3 units; Mathematics A, B, 2½ units; 2 units of each of two of the following: Latin, German, French, Spanish; and sufficient electives to make a total of 15 units.

This Group offers advantages in supplying the essentials of a modern general culture course.

It provides the prospective teacher of general science with an adequate knowledge of the three fundamental sciences, and by adding certain studies, as electives in the Senior year, in the Department of Philosophy, the requirements of the Pennsylvania School Code are fully met.

In the Junior and Senior years of this Group, branches introductory to the study of Medicine are pursued. In the Freshman and Sophomore years a special pre-medical course is given which is accepted by some medical schools as meeting their requirements for admission:

First year,—German, Latin or French, English, Chemistry, Biology.

Second year,—German or French, English, Chemistry, Biology, Physics, Philosophy.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

For optional courses in Military Science and Tactics for two or more years, see pages 96 to 101.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German* : Composition, Conversation, Modern Prose,	I*	3	I*	3	59
or German* : Elementary German	A*	3	A*	3	59
French* : Grammar, Composition, Modern Prose,	I*	3	I*	3	65
or French* : Elementary French,	A*	3	A*	3	65
or Latin : Livy, Horace (Odes), Cicero (De Senectute)	I, 2	3	I, 2	3	63
English : English Composition	A	3	A	3	58
History : Political History of Modern Europe	I	2	I	2	68
English Bible : General Introduction	I	1	I	1	67
Mathematics : Plane Trigonometry, Solid Geometry	I	3	I, 2	3	81
Chemistry : General Chemistry	I	3	I	3	78
Total Semester Hours		18		18	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German : German Classics,	2	3	2	3	60
or German : Composition, Conversation, Modern Prose,	I	3	I	3	59
or French : Nineteenth Century,	2	3	2	3	65
or French : Grammar, Composition, Modern Prose,	I	3	I	3	65
or French : Elementary French	A	3	A	3	65
English : English and American Literature	I	2	I	2	58
Philosophy : Psychology, Introduction to Philosophy	I	2	2	2	70
Mathematics : Advanced Algebra, Plane and Solid Analytic Geometry	3	3	4	4	81
Chemistry : Qualitative Analysis	2	3	2	3	79
Physics : General Physics, (Mechanics, Sound, and Heat),	I	3	I	3	83
Physics : Laboratory Physics	2	1	2	1	83
Total Semester Hours		17		18	

*Students offering German for admission will take German 1 in the Freshman Year; those offering Latin or French without German for admission will take German A. Those offering French for admission will take French 1 (if electing French); others electing French will take French A.

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	58
Christian Evidences:	1	2			68
Philosophy: Ethics			5	2	71
Biology: General Biology, Zo- ölogy	1, 2	4	2, 3	4	76
Biology: Botany	7	2	7	2	77
Chemistry: Quantitative Analysis	3	3	3	3	79
Physics: General Physics (Elec- tricity and Magnetism, and Light)	3	3	3	3	83
Physics: Physical Measure- ments	4	1	4	1	83
<hr/>					
Total Semester Hours		17		17	

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Scientific German	3	3	3	3	60
Economics: Principles of Economics	1	3	1	3	73
Biology: Human Anatomy and Physiology, Mammalian Histology, Embryology	4	3	5, 6	3	77
Chemistry: Organic Chemistry	4	4	4	4	79
Electives:		2-5		2-5	
Those looking forward to teaching are advised to elect:					
Philosophy: Logic	3	2			71
Education: History of Education, Pedagogy	1	3	2	3	72
Education: School Organization and Method of Teaching	3	2			73
Biology: Personal and Public Hygiene	9	1	9	1	78
Those looking forward to Medicine are advised to elect:					
Political Science: Comparative Government, Political Parties	1	3	2	3	75
French:		2		2	65
or German:		2		2	60
Biology: Personal and Public Hygiene	9	1	9	1	78
Geology: Dynamical and Historical Geology	1	2	2	2	80
Physics: Recent Advances in Physics			7	2	84
In addition to the above lists, the following are suggested for general culture:					
History: English History, United States History,	2	3	3	3	69
or History: The German Empire and its Present Organization, Era of Reformation	4	3	5	3	69, 70
Total Semester Hours	15-18		15-18		

GROUP VI.—COMMERCE AND FINANCE.**Group Adviser:** Professor Ashworth.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; History, 2 units; 2 units of each of two of the following: Latin, German, French, Spanish; and sufficient electives to make a total of 15 units.

This Group is designed primarily for students who intend to enter business, law or the public service. Especial attention is given to the general principles underlying all lines of business, and to the relation of business to government and politics.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

For optional courses in Military Science and Tactics for two or more years, see pages 96 to 101.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German*: Composition, Conversation, Modern Prose,	I*	3	I*	3	59
or German*: Elementary German	A*	3	A*	3	59
French*: Grammar, Composition, Modern Prose,	I*	3	I*	3	65
or French*: Elementary French	A*	3	A*	3	65
English: English Composition	A	3	A	3	58
History: Political History of Modern Europe	I	2	I	2	68
English Bible: General Introduction	I	1	I	1	68
Mathematics: Plane Trigonometry, Solid Geometry	I	3	I, 2	3	81
Biology: General Biology, Zoölogy,	I, 2	3	2, 3	3	76
or Chemistry: General Chemistry,	I	3	I	3	78
or Physics: General Physics (Mechanics, Sound, and Heat),	I	3	I	3	83
and Physics†: Laboratory Physics	2†	1	2†	1	83
or Physics:	A	4	A	4	82
<hr/>					
Total Semester Hours	18 or 19		18 or 19		

*Students offering Greek for admission will take German A in the Freshman Year (if electing German); those offering German for admission will take German 1 (or French).

†In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: German Classics,	2	3	2	3	60
or German: Composition, Conversa-	1	3	1	3	59
tion, Modern Prose,	2	2	2	2	65
or French: Nineteenth Century,	1	3	1	3	65
or French: Grammar, Composition,	1	3	1	3	65
Modern Prose	1	2	1	2	58
English: English and American	1	2	1	2	58
Literature	1	2	2	2	70
Philosophy: Psychology, Introduc-	1	3	1	3	73
tion to Philosophy	1	3	1	3	73
Economics: Principles of Economics	1	3	1	3	73
Political Science: Comparative Gov-	1	3	2	3	75
ernment, Political Parties	6A	4	6A	4	74
Economics: Accounting	6A	4	6A	4	74
Total Semester Hours	17		17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: German Classics,	2	3	2	3	60
or German: Epochs of German	4	3	4	3	60
Literature,	4	3	4	3	60
or French: Scientific French,	1	3	1	3	66
or Spanish: Elementary Spanish	2	2	2	2	58
English: Shakespeare	2	2	2	2	58
History†: English History, United	2†	3	3†	3	69
States History,	2†	3	3†	3	69
or History*: The German Empire,	4*	3	5*	3	69, 70
Era of Reformation	4*	3	5*	3	69, 70
Economics*: Money and Banking,	2*	3	5*	3	74
Business Law,	2*	3	5*	3	74
or Economics†: Public Finance, Ac-	3†	3	6B†	3	74
counting	3†	3	6B†	3	74
Economics†: Labor Problems, Busi-	7†	3	8†	3	74, 75
ness Organization,	7†	3	8†	3	74, 75
or Political Science*: International	3*	3	4*	3	75
Law, Constitutional Law	3*	3	4*	3	75
Christian Evidences:	1	2	5	2	68
Philosophy: Ethics	1	2	5	2	71
Total Semester Hours	16		16		

*Given 1916-1917 and alternate years.

†Given 1917-1918 and alternate years.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics* : Money and Banking,					
Business Law,	2*	3	5*	3	74
or Economics† : Public Finance, Ac-					
counting	3†	3	6B†	3	74
Economics† : Labor Problems, Busi-					
ness Organization,	7†	3	8†	3	74, 75
or Political Science* : International					
Law, Constitutional Law	3*	3	4*	3	75
Philosophy† : Sociology	4†	2			71
Electives:	7-10		9-12		
Total Semester Hours	15-18		15-18		

*Given 1916-1917 and alternate years.

†Given 1917-1918 and alternate years.

GROUP VII.—CIVIL ENGINEERING.**Group Adviser:** Professor Allen.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Latin or German or French or Spanish; and sufficient electives to make a total of 15 units.

This Group affords suitable training not only for students who expect to enter this profession, but for those who wish to prepare themselves for callings more or less closely related to engineering. During the first two years emphasis is laid on the underlying natural sciences and on mathematics, while during the last two years technical subjects are introduced. Some liberal arts studies are required, and extreme specialization in instruction is avoided.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

For optional courses in Military Science and Tactics for two or more years, see pages 96 to 101.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose,	I	3	I	3	59
or Latin: Livy, Horace,	I, 2	3	2, 3	3	63
or French: Grammar, Composition, Modern Prose,	I	3	I	3	65
or Spanish: Elementary Course	I	3	I	3	66
English: English Composition,	A	3	A	3	58
Mathematics: Plane Trigonometry	I	3	I	I	81
Mathematics: Advanced Algebra	3	3			81
Mathematics: Plane and Solid Analytic Geometry			4	4	81
Chemistry: General Chemistry	I	3	I	3	78
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	3	83
Physics: Laboratory Physics	2	I	2	I	83
Engineering: Mechanical Drawing	I	I	I	I	87
Total Semester Hours		20		19	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	58
Mathematics: Differential and Integral Calculus	6	4	6	4	82
Chemistry: Qualitative Analysis	2	3			79
Physics: General Physics (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	83
Physics: Physical Measurements	4	1	4	2	83
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	87
Engineering: Mechanics	3	3	3	3	87
Engineering: Metallurgy of Steel			4	1	88
Civil Engineering:			27	1	91
Total Semester Hours		19		18	

Summer Field Surveying.

Civil Engineering 11.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. Credit of two semester hours. (See page 89).

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	68
English Bible: General Introduction	1	1	1	1	67
Philosophy: Psychology	1	2			70
Mathematics: Astronomy	10	1			82
Geology and Mineralogy: Mineralogy	3	2			80
Physics: Electrical Measurements	6	3			84
Engineering: Hydraulics			5	3	88
Engineering: Materials Testing	6	3			88
Engineering: Elements of Electrical Engineering			7	4	88
Civil Engineering: Mechanics (B), Structural Design	18	2	19	2	90
Civil Engineering: Surveying (B), Office Work	12	2			89
Civil Engineering: Railroads (A)			16	4	89
Total Semester Hours		18		16	

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. Credit of two semester hours. (See page 89).

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Economics*: Principles of Economics	I	3	I	3	73
Christian Evidences:	I	2			68
Philosophy: Ethics			5	2	71
English: English Novel and Short Story	3	2	3	2	58
Geology and Mineralogy: Dynamical Geology	I	2			80
Civil Engineering: Surveying (B), Office Work	14	2			89
Civil Engineering: Railroads (B)			17	2	90
Civil Engineering: Structural Design	19	3	19	3	90
Civil Engineering: Structural Drafting			20	2	90
Civil Engineering: Contracts and Specifications			21	1	90
Civil Engineering: Masonry	22	3			91
Civil Engineering: Highways			23	2	91
Civil Engineering: Seminary	26	1	26	1	91
Civil Engineering: Sewerage			25	2	91
Total Semester Hours		18		20	

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

GROUP VIII.—MUNICIPAL (SANITARY) ENGINEERING.**Group Adviser:** Professor Allen.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Latin or German or French or Spanish; and sufficient electives to make a total of 15 units.

This Group is offered for students who wish to fit themselves for dealing with the sanitary problems of the modern city, from the engineer's viewpoint. The course of study for the first three years is identical with that of Group VII.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

For optional courses in Military Science and Tactics for two or more years, see pages 96 to 101.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose	I	3	I	3	59
or Latin: Livy, Horace, or French: Grammar, Composition, Modern Prose.	I, 2	3	2, 3	3	63
or Spanish: Elementary Course	I	3	I	3	65
English: English Composition,	I	3	I	3	66
Mathematics: Plane Trigonometry	A	3	A	3	58
Mathematics: Advanced Algebra	I	3	I	I	81
Mathematics: Plane and Solid Analytic Geometry	3	3			81
Chemistry: General Chemistry			4	4	81
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	3	78
Physics: Laboratory Physics	I	3	I	3	83
Engineering: Mechanical Drawing	2	I	2	I	83
	I	I	I	I	87
Total Semester Hours		20		19	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	58
Mathematics: Differential and Integral Calculus	6	4	6	4	82
Chemistry: Qualitative Analysis	2	3			79
Physics: General Physics (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	83
Physics: Physical Measurements	4	1	4	2	83
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	87
Engineering: Mechanics	3	3	3	3	87
Engineering: Metallurgy of Steel			4	1	88
Civil Engineering:			27	1	91
Total Semester Hours	19		18		

Summer Field Surveying.

Civil Engineering 11.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. Credit of two semester hours. (See page 89).

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	68
English Bible: General Introduction	1	1	1	1	67
Philosophy: Psychology	1	2			70
Mathematics: Astronomy	10	1			82
Geology and Mineralogy: Mineralogy	3	2			80
Physics: Electrical Measurements	6	3			84
Engineering: Hydraulics			5	3	88
Engineering: Materials Testing	6	3	6	1	88
Engineering: Elements of Electrical Engineering			7	4	88
Civil Engineering: Mechanics (B)	18	2	18	2	90
Civil Engineering: Surveying (B), Office Work	12	2			89
Civil Engineering: Railroads (A)			16	4	89
Total Semester Hours	18		16		

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. Credit of two semester hours. (See page 89).

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Economics*: Principles of Economics	I	3	I	3	73
Christian Evidences:	I	2			68
Philosophy: Ethics			5	2	71
English: English Novel and Short Story	3	2	3	2	58
Geology and Mineralogy: Dynamical Geology	I	2			80
Biology: Sanitation and Bacteriology			8	2	78
Chemistry: Water and Sewage	5	2			79
Civil Engineering: Surveying (B), Office Work	14	2			89
Civil Engineering: Structural Design	19	3			90
Civil Engineering: Contracts and Specifications			21	I	90
Civil Engineering: Masonry	22	3			91
Civil Engineering: Highways			23	2	91
Civil Engineering: Water Supply Engineering			24	2	91
Civil Engineering: Sewerage			25	2	91
Civil Engineering: Seminary	26	I	26	I	91
Total Semester Hours		20		17	

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

GROUP IX.—MECHANICAL ENGINEERING.**Group Adviser:** Professor Wing.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Latin or German or French or Spanish; and sufficient electives to make a total of 15 units.

This Group is designed for students who wish to prepare themselves for work along engineering and manufacturing lines. The Group combines the study of the basic principles of engineering and, to a limited extent, their application to practical problems, with some work in the liberal arts. The instruction is of a broad and fundamental nature, and will be found useful to students who are desirous of fitting themselves for future promotion to executive positions in manufacturing and industrial concerns.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

For optional courses in Military Science and Tactics for two or more years, see pages 96 to 101.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose,	I	3	I	3	59
or Latin, Livy, Horace,	1, 2	3	2, 3	3	63
or French: Grammar, Composition, Modern Prose,	I	3	I	3	65
or Spanish: Elementary Course	I	3	I	3	66
English: English Composition,	A	3	A	3	58
Mathematics: Plane Trigonometry	I	3	I	I	81
Mathematics: Advanced Algebra	3	3			81
Mathematics: Plane and Solid Analytic Geometry			4	4	81
Chemistry: General Chemistry	I	3	I	3	78
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	I	83
Physics: Laboratory Physics	2	I	2	I	83
Engineering: Mechanical Drawing	I	I	I	I	87
Total Semester Hours		20		19	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	58
Mathematics: Differential and Integral Calculus	6	4	6	4	82
Chemistry: Qualitative Analysis	2	3			79
Physics: General Physics (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	83
Physics: Physical Measurements	4	1	4	1	83
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	87
Engineering: Mechanics	3	3	3	3	87
Engineering: Metallurgy of Steel			4	1	88
Total Semester Hours	19		16		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	68
English Bible: General Introduction	1	1	1	1	67
Philosophy: Psychology	1	2			70
Engineering: Hydraulics			5	3	88
Engineering: Materials Testing	6	3	6	1	88
Engineering: Elements of Electrical Engineering	7	2	7	3	88
Mechanical Engineering: Shop Work	31	2	32	2	92
Mechanical Engineering: Kinematics	33	4			92
Mechanical Engineering: Machine Design (A)			34	3	92
Mechanical Engineering: Heat Power Engineering (A)	36	3	36	3	93
Total Semester Hours	19		18		

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	I	3	I	3	73
Christian Evidences:	I	2			68
Philosophy: Ethics			5	2	71
English: English Novel and Short Story	3	2	3	2	58
Mechanical Engineering: Machine Design (B)	35	3	35	3	92
Mechanical Engineering: Heat Power Engineering (B)	37	2	37	2	93
Mechanical Engineering: Power Plant Design			38	4	93
Mechanical Engineering: Mechanical Engineering Laboratory	39	I	39	I	93
Civil Engineering: Mechanics (B)	18	I			90
Civil Engineering: Structural Design			19	I	90
Civil Engineering: Surveying (C)	15	I			89
Mechanical Engineering: Semi-nary	40	I	40	I	93
Total Semester Hours		16		19	

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

GROUP X.—ELECTRICAL ENGINEERING.**Group Adviser:** Professor Wing.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Latin or German or French or Spanish; and sufficient electives to make a total of 15 units.

This Group is designed for students who wish to specialize in the study of Applied Electricity. The course of study for this Group for the first three years is identical with that of Group IX. Ample opportunity is given for specialization in the Senior Year.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

For optional courses in Military Science and Tactics for two or more years, see pages 96 to 101.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose,	1	3	1	3	59
or Latin, Livy, Horace,	1, 2	3	2, 3	3	63
or French: Grammar, Composition, Modern Prose,	1	3	1	3	65
or Spanish: Elementary Course	1	3	1	3	66
English: English Composition	A	3	A	3	58
Mathematics: Plane Trigonometry	1	3	1	1	81
Mathematics: Advanced Algebra	3	3			81
Mathematics: Plane and Solid Analytic Geometry			4	4	81
Chemistry: General Chemistry	1	3	1	3	78
Physics: General Physics (Mechanics, Sound, and Heat)	1	3	1	3	83
Physics: Laboratory Physics	2	1	2	1	83
Engineering: Mechanical Drawing	1	1	1	1	87
Total Semester Hours		20		19	

Sophomore Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
English: English and American Literature	1	2	1	2	58
Mathematics: Differential and Integral Calculus	6	4	6	4	82
Chemistry: Qualitative Analysis	2	3			79
Physics: General Physics (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	83
Physics: Physical Measurements	4	1	4	1	83
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	87
Engineering: Mechanics	3	3	3	3	87
Engineering: Metallurgy of Steel			4	1	88
Total Semester Hours	19		16		

Junior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
History: Political History of Modern Europe	1	2	1	2	68
English Bible: General Introduction	1	1	1	1	67
Philosophy: Psychology	1	2			70
Engineering: Hydraulics			5	3	88
Engineering: Materials Testing	6	3	6	1	88
Engineering: Elements of Electrical Engineering	7	2	7	3	88
Mechanical Engineering: Shop Work	31	2	32	2	92
Mechanical Engineering: Kinematics	33	4			92
Mechanical Engineering: Machine Design (A)			34	3	92
Mechanical Engineering: Heat Power Engineering (A)	36	3	36	3	93
Total Semester Hours	19		18		

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	I	3	I	3	73
Christian Evidences:	I	2			68
Philosophy: Ethics			5	2	71
English: English Novel and Short Story	3	2	3	2	58
Mechanical Engineering: Mechanical Engineering Laboratory	39	I	39	I	93
Electrical Engineering: Theory of Electrical Machinery	45	3	45	3	94
Electrical Engineering: Characteristics of Electrical Machinery	46	2	46	2	94
Electrical Engineering: Electrical Laboratory	47	3	47	3	94
Mechanical Engineering: Heat Power Engineering (B)	37	2			93
Electrical Engineering: Seminary	48	I	48	I	94
Total Semester Hours		19		17	

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

COURSES OF INSTRUCTION

ENGLISH.

Professor Hagen, and Messrs. Whiting and Ikeler.

- A. English Composition.**—This course consists of practice in writing exposition, argument, description, and narration, in long and short themes, and in letters; with the parallel study of specimens, and of the principles of rhetoric as they apply to writing. Lectures, recitations, written exercises in the class-room and outside, and personal conferences.

Required course for all Freshmen. Three periods thruout the year. Credit of six semester hours.

- English and American Literature.**—This course consists of a survey of English Literature from "Beowulf" to Kipling, and of the chief American writers; lectures, collateral reading, and written reports.

Required course for all Sophomores. Two periods thruout the year. Credit of four semester hours.

- 2. Shakespeare.**—This course embraces the careful study of half a dozen of the plays, with the more rapid reading of others, selected and arranged so as to give the student an insight into the development of Shakespeare's mind and art.

Required course for all Juniors in Groups I-VI. Two periods thruout the year. Credit of four semester hours.

- 3. English Novel and Short Story.**—First two-thirds of the year, a survey of the growth of the novel in structure and content; last third of the year, a study of the principles and structure of the short story. Lectures, collateral reading of representative novels and short stories, class discussions, weekly reports, and personal conferences.

Required course for Juniors in Groups II and VI, and all Seniors in Groups VII-X; open to all other Juniors as an elective course. Two periods thruout the year. Credit of four semester hours.

- 4. Anglo Saxon.**—An introductory course including the study of the elementary principles of the grammar and the reading of representative selections from Anglo-Saxon literature.

Elective for Juniors and Seniors. May be substituted by Juniors and Seniors in Groups II and VI for Course 3. Two periods thruout the year. Credit of four semester hours.

- 5. Public Speaking and Oral Reading.**—This course consists of practice in prepared and extempore speaking, in oral reading of prose and poetry, and in general platform work.

Elective course open to all qualified students. Two periods thruout the year. Credit of four semester hours.

- 6. Argumentation and Debating.**—A study of the substance and the forms of argumentative discourse, written and spoken; involving the principles of inductive and deductive logic, of sound and fallacious reasoning, of evidence, of the selection and use of materials, and of the best forensic and platform practice.

Elective course open to members of class and college debating teams; and to qualified Juniors and Seniors. Two periods thruout the year. Credit of four semester hours.

GERMAN.

Professor Grimm, Mr. Groff, and Miss Bausch.

- German A.**—An elementary course. For students with no preliminary training in German, but with several years' work in other languages. It includes the study of grammar, practice in writing and speaking German, translation of prose and poetry, and the memorizing of simple poems.

Three periods thruout the year. Credit of six semester hours.

- German B.**—A course for beginners similar to German A, but especially designed for students in Group 1. For such students it completes the requirements in German for the degree of Bachelor of Arts. They are, however, advised to take also German 1 or German 2.

Three periods thruout the year. Credit of six semester hours.

- German 1.**—For students who have presented German for admission; also for those who have completed German A. It may likewise be taken by students who have passed in German B. This course comprises a brief review of grammar, a careful study of syntax combined with oral and

written prose composition, exercises in conversation, and readings, both with previous preparation and at sight, from standard writers of modern German prose. Some time is also given to the reciting of ballads and lyrics. Outside reading may be assigned.

Three periods thruout the year. Credit of six semester hours.

German 2.—For students who have passed in German 1; also open to those students who have attained a grade of not less than C in German B. This course is devoted to the study of selections from classical authors, chiefly from Lessing, Goethe, and Schiller. Private reading is required.

Three periods thruout the year. Credit of six semester hours.

German 3.—For candidates for the degree of Bachelor of Science, also open to others who have completed German 1. This course consists of the cursory reading in class of German essays of a general scientific character, together with private assignments on some special subject in Science.

Two or three periods thruout the year. Credit of four or six semester hours.

German 4.—For those students who have chosen German as their principal subject in Group II; open also to others who satisfy the instructor of their fitness to take it. The work of this course includes the study of the main epochs of the German language and literature, on the basis of readings from representative poets and masters of German style.

Two or three periods thruout the year. Credit of four or six semester hours.

German 5.—An elective course on German literature in the period of the Reformation, with special reference to Luther and the church hymns. Open to advanced students in German.

Hours arranged to suit the convenience of instructor and students.

German 6.—An elective course devoted to the discussion of grammatical topics, advanced composition, and the critical reading of selected texts. Special attention is given to the needs of those students who wish to teach German in the public or secondary schools.

Hours arranged to suit the convenience of instructor and students.

German 7.—A course aiming to widen the student's vocabulary of modern German by means of extracts from newspapers, periodicals, and other suitable reading. It also presents

to the student a general view of the German land and people. Attention is given to the needs of those looking forward to a business career. As far as practicable, the course will be conducted in German.

Hours to be arranged.

Deutscher Verein.—Opportunity for more extended German conversation and discussions referring to German life, literature, and culture may be offered to advanced students in a voluntary German Club, meeting fortnightly from November to April inclusive.

GREEK.

Professor Billheimer.

Preparatory Greek.

A. First Year Greek.—An elementary course for students who have not presented Greek for admission. The course will cover White's "First Greek Book."

Three periods thruout the year. Credit of six semester hours.

B. Second Year Greek.—A course for those who have taken First Year Greek. Cebes' "Tablet" and Books I-IV of Xenophon's "Anabasis" will be read.

Three periods thruout the year. Credit of six semester hours.

College Greek.

1. Xenophon.—Selections from Books I-IV of the "Hellenica," with a thoro review of forms and the essentials of grammar. Greek Prose Composition.

Freshman course. Three periods, first semester. Credit of three semester hours.

2. Lysias.—Selected Orations, special attention being given to syntax. Greek Prose Composition.

Freshman course. Three periods, second semester. Credit of three semester hours.

3. Plato.—"Apology," and "Crito." Interpretation of the text and advanced work in syntax.

Sophomore course. Three periods, first semester. Credit of three semester hours.

4. Homer.—Books IX-XIII of the "Odyssey." Attention will be given to the meter, to Ionic forms, and to the special features of syntax.

Sophomore course. Three periods, second semester. Credit of three semester hours.

- 5. Euripides.**—This course will give a practical introduction to Greek metrics, and will include the history of Greek Tragedy and of the Greek Theatre. (To be given in 1917-1918.)

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

- 6. Greek History.**—A survey of the history of Greece from the earliest times to the battle of Chaeronea. The study of the history of this period will be accompanied by an examination of the early archaeological remains and by the reading of selections from the literary and epigraphical sources. Reports on special subjects will be made by members of the class. (To be given in 1917-1918.)

Junior and Senior course. Two periods, second semester. Credit of two semester hours.

- 7. Demosthenes.**—The "First Philippic" and the "Olynthiacs." Oxford text. The students prepare grammatical and historical notes for each oration. (Given in 1918-1919.)

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

- 8. New Testament Study.**—This course embraces a study of New Testament Greek. Some book of the New Testament is read in the original. The study of Biblical Greek has its approach from the classic side, but special attention is given to the distinctive peculiarities of Hellenistic Greek as a later and less artificial dialect of the elaborate and polished language of orators and philosophers. The student is familiarized with the vocabulary of the New Testament. Etymology and syntax are systematically studied. (Given in 1918-1919.)

Junior and Senior course. Two periods, second semester. Credit of two semester hours.

Special Arrangement for Beginning Greek in College.

To provide for applicants for Group I who cannot offer the entrance requirements in Greek, but can offer three entrance units in Modern Languages instead, provision is made for beginning Greek in College. Such students take Preparatory Greek Courses A and B during Freshman and Sophomore years, and receive College credit for same. During Junior and Senior years they have Greek 1, 2, 3, 4.

A student who is a regular member of Group II will be allowed to elect courses in Greek, including Courses A and B, after the Sophomore year, and will be given College credit for them.

LATIN.

Professor Bickl .

Allen and Greenough's "Latin Grammar" and Harper's "Latin Lexicon" are recommended. Of the smaller dictionaries the student is advised to get the "Elementary Latin Dictionary," by Charlton T. Lewis.

1. **Livy.**—Selections from Book I, and the Hannibalian War in Books XXI and XXII. Special attention is given the syntax and Livy's peculiarities of style. Collateral reading on the Punic Wars, and lectures on Rome and Carthage.

Freshman course. Three periods during the first semester up to the Christmas vacation. Credit of two semester hours.

2. **Horace.**—Selections from the "Odes," including a critical interpretation with special attention to the Horatian meters and the mythological and historical allusions of the text. Berens' "Hand-Book of Mythology" is recommended. Collateral reading on Horace as a lyric poet.

Freshman course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

3. **Cicero.**—The "De Senectute" will be read, with thorough drill in syntax, special attention being given to the mode uses of the Latin Subjunctive.

Freshman course. Three periods from the last of March to the close of the academic year. Credit of two semester hours.

Note. During part of the Freshman year there will be, in connection with the reading of the Latin text, drill in Latin Prose Composition, embracing a rapid review of Latin syntax, with oral and written practice in the principles involved.

- Cicero.**—The "De Amicitia" or the "De Natura Deorum." Rigid drill in syntax will be continued, with training in reading the Latin text with expression. Collateral reading of the life and times of Cicero. Informal lectures on Cicero's philosophical views.

Sophomore course. Three periods a week during the first semester up to the Christmas vacation. Credit of two semester hours.

- Horace.**—"Satires," and the "De Arte Poetica." After the study of some selected satires the "Ars Poetica" is read, and each student is required to prepare a written analysis of the poem. There is a review of the dactylic hexameter versification.

Sophomore course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

6. **Tacitus.**—The "Agricola", or selections from the "Annals." Along with the translation of the text there will be a study of the times in relation to the literature of this period, and special attention will be given to the characteristics of the Silver Age Latinity.

Sophomore course. Three periods from the last of March to the close of the year. Credit of two semester hours.

7. **Quintilian.**—Tenth Book of the "Institutes." The student is required to make a close study of the terms used by Quintilian in literary criticism, and to make a summary and classification of the Greek and Roman authors.

Junior course. Two periods during the first semester to the Christmas vacation. With course 8, credit of four semester hours.

8. **Juvenal.**—Selected Satires. With full explanations of the text and collateral reading on the private and social life of the Romans of the Empire. Followed by a short course in Roman Antiquities.

Junior course. Two periods from the beginning of January to the close of the college year. With course 7, credit of four semester hours.

9. **Terence or Plautus.**—The "Andria" of Terence or the "Captivi" of Plautus. The dramatis personae are assigned to special members of the class and the parts are rendered both in Latin and English. Informal lectures on the Roman theatre; also on the origin and development of the Latin drama, and the value of the Roman comedy to the philologist and the student of Roman life.

Senior course. Two periods for ten weeks. With courses 10 or 11, and 12 or 13, credit of four semester hours.

10. **Latin Literature.**—A course of lectures embracing a general survey of the whole field, and aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, with special attention to the writers of the Golden and Silver Ages. Or, —

11. **Roman History.**—A course of lectures covering the period from 150 B. C. to 100 A. D.

Senior course. Two periods for eight weeks. With courses 9 or 12, credit of four semester hours.

12. **Roman Law.**—Morey's "Outlines" is the chief text-book. After a careful study of the historical development and content of Roman Law, a paper is required from each member of the class on a subject assigned for special investigation. Or, —

13. Roman Constitutional History.—The subject is pursued with the aid of a text-book.

Senior course. Two periods for seventeen weeks. With courses 9 and 10, or 11, credit of four semester hours.

FRENCH.

Professor Barney and Mr. Groff.

French A.—An elementary course for students who have not offered French for admission. For students in Group I, it satisfies the requirements in French for the baccalaureate degree.* This course includes careful drill in pronunciation, the study of the essentials of grammar with constant practice in turning English into French, and the translation of a suitable French reader.

Three periods thruout the year. Credit of six semester hours.

French 1.—An intermediate course for students who have offered French for admission, also open to those who have passed creditably in French A. This course comprises the study of grammatical principles, composition, exercises in pronunciation, dictation, and readings from standard writers of modern prose. Outside reading may be assigned.

Three periods thruout the year. Credit of six semester hours.

French 2.—Advanced course in Nineteenth Century Literature. Open to all students who have completed with credit French 1 or equivalent work. The first semester will be devoted to Victor Hugo and the Romantic School. In the second semester the Realistic and Naturalistic Movements will be studied thru some of their representative works. Opportunity will also be given to hear and speak French. Private reading is required. This course is intended to alternate with French 3.

Two or three periods thruout the year. Credit of four or six semester hours. (Offered 1917-1918.)

French 3.—Advanced Course. Open to all students who have completed with credit French 1, or who have done equivalent work. This course is devoted to the study of French classics, with special reference to Corneille, Racine, Molière. Some time is also given, during the second semester, to more difficult representative prose. Private reading is required.

Two or three periods thruout the year. Credit of four or six semester hours. (Omitted 1917-1918.)

*Students who have the ministry in view may substitute German 1 or 2

French 4.—Scientific French. This course consists of the reading of texts and magazine articles dealing with scientific subjects. Subjects for outside reading, dealing with branches of science in which the students expect to specialize, will be assigned.

Hours and credits to be arranged.

ITALIAN.

Professor Barney.

Italian 1.—Elementary course. This course aims to give the student thoro training in the rudiments of the Italian language and to enable him to read ordinary Italian with ease and accuracy. Course requirements in French, if any, must first be satisfied.

Three periods thruout the year. Credit of six semester hours.

Italian 2.—Advanced course. This course consists of a review of grammar together with readings from more difficult modern prose and poetic works.

Two periods thruout the year. Credit of four semester hours.

SPANISH.

Professor Barney.

Spanish 1.—Elementary course. This course is intended for those who desire a knowledge of the essentials of the Spanish language, either for literary work or for a business career. Course requirements in French, if any, must first be satisfied.

Three periods thruout the year. Credit of six semester hours.

Spanish 2.—Advanced course. This course consists of a review of grammar together with advanced composition. Selections from more difficult modern prose and poetic works, as well as from the classics, including Cervantes, will be read.

Two periods thruout the year. Credit of four semester hours.

COMPARATIVE PHILOLOGY.

Professor Grimm.

1. Linguistic Science.—A course open to advanced students, dealing with the principles of Linguistic Science.

One period thruout the year. Credit of two semester hours.

2. Sanskrit.—Beginners' course in Sanskrit. Open to advanced students. This course includes the study of grammar and the interpretation of an easy text from Lanman's Reader.

Two periods thruout the year. Credit of four semester hours.

ENGLISH BIBLE.

Professor Valentine.

1. **General Introduction to the English Bible.**—This course aims to bring to the student a sympathetic knowledge of the life and thought of the Hebrews as the nation which has most vitally influenced our own religious thought. The Bible is the source-book for this knowledge, and the object is to acquaint the student with it as the record of the advance and culmination of the highest religious consciousness of the human race. The progress of the revelation presented in the Scriptures is followed in its historical developments from the origins of the Hebrew people to the close of the Apostolic Age. In explaining the difference between the Hebrews and their neighbors the reasons are found not in their peculiar environment or exclusive racial characteristics, but, as the records themselves explain it, in terms of divine planning and a progressive human responsiveness. The message of the biblical writers is studied in its historical context so that its original significance may be understood as well as its meaning for the present.

Freshman course. One period thruout the year. Credit of two semester hours.

2. **Literary Study of the Bible.**—The Bible is studied as a body of English literature, and the sacred writings are subjected to a morphological analysis. The study of the literary forms is entirely independent of the historical investigation. The distinctive types of literary structure in the Bible as presented by Moulton in his "Modern Reader's Bible" are studied in detail and their permanent literary value is noted. The underlying principle of this study is that a thorough understanding of the outer literary form is an essential guide to an appreciation of the inner matter and spirit.

Sophomore course. One period thruout the year. Credit of two semester hours.

3. **Life of Christ.**—A survey is given of the political, religious, and social conditions in the time of Christ as the background necessary to an understanding of His life and teachings. The events of His life, with special reference to His religious and ethical teachings as these are narrated in the four-fold Gospel, are studied with a view to

exhibiting Him in His solitary relationship to God and man.

Junior course. One period thruout the year. Credit of two semester hours.

4. New Testament Study.—See Greek 8.

CHRISTIAN EVIDENCES.

Professor Valentine.

1. A constructive study of the evidences of the presence and action in the world of a supernatural redemptive power operating thru the Gospel, as these appear in the first Christian documents, in Christian history, and Christian experience, with the special aim of dealing with the perplexing questions which the mind encounters in the effort to intellectualize the content of the Christian revelation and state it in terms of modern knowledge and thought. The characteristic features of Christianity, the superhuman character of Christ, His unparalleled teachings, and His supernatural works as the normal expression of His supernatural person, are dwelt upon. The historicity of the documents that bear witness to Him, His unshared pre-eminence as a creative force in the world, and the impossibility of accounting for the distinctive Christian phenomena by a process of natural evolution are emphasized. The inductive method is followed. The Christian conclusion is shown to be the logical outcome of a study of the unique facts.

Junior course. Two periods, first semester. Credit of two semester hours.

HISTORY.

Professor Valentine.

1. **Political History of Modern Europe.**—The present conditions of Europe are explicable only in the light of preceding events. To understand them they must not only be examined; they must be related to their antecedents. The ages are bound together, and no point within the historical period can be taken as an absolute beginning. But a new era was inaugurated by the political and industrial revolutions of the eighteenth century. With these as background the progress of the subsequent development is studied, with the special view of enabling the student to understand contemporary events and movements by thus connecting them with their proximate origins. As the development has been conspicuously social as well as

political, social and political history are combined in one synthesis, and political and economic conditions are exhibited in their mutual reactions.

Freshman course. Two periods thruout the year. Credit of four semester hours.

- 2. English History.**—After a rapid introductory survey of the Anglo-Saxon period, the course begins with the Norman conquest and deals with the details of historical development down to the present time. Stress is laid upon such phases of English history as will specially aid the student to understand the modern political development in continental Europe and in the United States. The materials of the study include text-books, lectures, secondary authorities, and sources, with frequent discussions of assigned readings.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Alternates with Course 4. Given 1917-1918 and alternate years.

Prerequisite, Course 1.

- 3. United States History.**—This course comprises a study in the epochs of our national history. An effort is made to discern the social and economic forces that have been operative in the development of the republic, and thus lead to an understanding of the national problems of the present. Much attention is given to American biography, and biographical essays, sketches of epochal events, and frequent reports on assigned topics are required.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Alternates with Course 5. Given in 1917-1918 and alternate years.

Prerequisite, Course 1.

- 4. The German Empire and Its Present Organization.**—The study begins with the rise of the Prussian monarchy, and traces the conditions prevailing in the Germanies during the seventeenth, eighteenth and nineteenth centuries, and the movements that resulted in the unification of Germany. It concludes with a detailed study of the present organization of the Empire and an examination of the political, social, and economic conditions of the present day.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Alternates with Course 2. Given in 1916-1917 and alternate years.

Prerequisite, Course 1.

- 5. Era of the Reformation.**—The particular phase of study for Course 5 varies from time to time, and provides opportunity for the investigation, if desirable, of periods or events suggested by contemporary events or other circumstances. As the Protestant world is engaged in 1917 in celebrating the quadricentennial of the Reformation of the sixteenth century, that epochal event is taken up for study this year. Like all movements that have powerfully influenced the subsequent course of history, the Reformation was due to long-working antecedent causes. The aim is to analyze the causes, trace the various lines of preparation, and note the great personalities that embodied these preparations in their own experience; and further to show the relation of the struggle then waged for religious freedom, the rights of conscience, and liberty of thought to the religious, political, social and economic changes that differentiate the modern from the medieval world.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Alternates with Course 3. Given in 1916-1917 and alternate years.

Prerequisite, Course 1.

PHILOSOPHY.

Professor Sanders and Mr. Taylor.

- 1. Psychology.**—A course in general psychology which aims to acquaint the student with the phenomena of mind, the methods of psychological investigation, and the practical bearing of the various mental functions on the problems of ethics, pedagogy, etc.

Sophomore course. Two periods, first semester. Credit of two semester hours.

- 2. Introduction to Philosophy.**—The course in general psychology suggests the problems of philosophy. The course in Introduction aims to acquaint the student with the content of philosophy, the origin and development of the various problems, the aim and method of philosophy, the results which have been attained, and its relation to the other departments of human thought.

Sophomore course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

- 3. Logic.**—An introductory course in the laws of thought. The evolution of the concept, its development into judgment and inference, the systematic function of classification, the explanatory function of generalization, and the methodology of proof and investigation are studied with a view to securing a foundation for the theory of knowledge and effective scientific method.

Junior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 4. Sociology.**—A study of the nature of society and its problems. Starting with the psychological factors of sociation, the development of social institutions, the economic and cultural factors of social progress, and the elimination of hindrances, evils are taken up in turn with a view to an understanding of the methods of social improvement.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 5. Ethics.**—A study of human conduct. The concept of personality and the idea of self-realization, as forming the background of moral judgment, are wrought into a system which explains the origin of the moral motives as well as their implication of God and immortality.

Junior course. Two periods, second semester. Credit of two semester hours.

6. History of Philosophy.

- A. Ancient and Medieval Period.**—This course traces the rise and progress of reflective thought as it appears among the Greeks and culminates in Scholasticism. Special stress is placed upon the Greek thinkers, with a view to acquiring an understanding of the spirit of philosophy.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

- B. Modern Period.**—This course covers the period from the Renaissance to the present time. Special stress is placed upon the great systems. The student is required to read selections from the great thinkers and report on them, the constant aim being to cultivate the philosophizing attitude, thus furnishing a basis for independent thought as well as an inspiration to do original thinking.

Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, 3, and 6 A.

- 7. Philosophy of Religion.**—A study of religion as a distinct factor in human development. The aim of the course is to show the nature of religion and to interpret the various forms in which it manifests itself.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 8. Metaphysics.**—Beginning with the method of system building, the student is introduced to the meaning of a world-view, the factors which a comprehensive and consistent view must recognize, and the reasons for regarding Theism as the theory which best meets existing requirements.

Senior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, 3, 5, and 6.

- 9. Advanced Logic.**—A study of epistemology investigating the principles of science with a view to understanding their origin, their validity, and their philosophical implications.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 10. Advanced Psychology.**—A study of the problems and methods in modern psychology. The course is adapted to those who intend pursuing advanced studies in the mental sciences. Individual research work is required.

Senior course. Two periods, first semester. Credit of two semester hours.

EDUCATION.

Professor Sanders and Dr. Moyer.

- 1. History of Education.**—A study of the most important movements in the history of education and of the factors and personages instrumental in bringing about the various steps in the long line of progress.

Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

- 2. Philosophy of Education.**—This course is an elaboration of the answer to the age old question "What is it to educate?" It is a systematic treatment of the aim of education, what determines the aim, the content-material and the principles governing the realization of this aim.

Three periods, second semester. Credit of three semester hours.

Alternates with Course 4. Given 1917-1918 and alternate years.

Prerequisite, Philosophy 1, 2, and 3, and Education 1.

- 3. School Organization and Method of Teaching.**—A study of the practical problems of organization and the application of principles.

Two periods, first semester. Credit of two semester hours.

Prerequisite, Philosophy 1, 2, and 3.

- 4. Secondary Education.**—A study of the principles and problems of the secondary school. The course is intended for those who are looking forward to High School and Superintendency positions.

Three periods, second semester. Credit of three semester hours.

Alternates with Course 2. Given 1916-1917 and alternate years.

Prerequisite, Courses, Philosophy 1, 2, and 3, and Education 1.

- 5. Educational Psychology.**—This course deals with the psychology of learning, methods of mental measurement, memory and intelligence tests, treatment of precocity and deficiency, &c.

Two periods, second semester. Credit of two semester hours.

Prerequisite, Philosophy 1 and 3.

- 6. The High School.**—This course is a continuation of Course 3, differing from it in concentrating attention on the problems of organization and method of teaching in the High School.

Two periods, second semester. Credit of two semester hours.

Prerequisite, Philosophy 1, 2, and 3.

Note. The Pennsylvania School Code requires of all teachers who desire the State certificate courses 1, 3, and 5, in Philosophy, and at least six semester hours in Education. Some of the neighboring States require more.

ECONOMICS.

Professor Ashworth.

- 1. Principles of Economics.**—After a brief study of the economic history of England and the United States attention is centered on fundamental economic laws and principles and their application to modern economic problems such as the tariff, corporations, transportation, labor problems, and the currency.

Sophomore course for students in Group VI. Junior and Senior course for other students. Three periods thruout the year. Credit of six semester hours.

Prerequisite for all other courses in Economics unless permission is otherwise given by Professor of Economics.

- 2. Money and Banking.**—An examination of the theories of money and credit with a history of the monetary and banking systems of the United States. A study is also made of European and Canadian Banking Systems.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given in 1917-1918 and alternate years.

- 3. Public Finance.**—A study of the principles of public finance with special reference to the United States. The various tax systems, government debt, and government expenditure are considered.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1917-1918 and alternate years.

- 4. Sociology.**—See Philosophy 4.

- 5. Business Law.**—This course is designed to give the student a knowledge of the legal rights and obligations arising out of common business transactions. The fundamental laws pertaining to contracts, partnerships, corporations, negotiable instruments, sales, etc., are examined.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1918-1919 and alternate years.

- 6. Accounting.**

- A. Elementary Accounting.**—This course deals with the methods of accounting in the various kinds of business and for the different types of organizations; the handling of single and double entry; the relations of bookkeeping to accounting; and other fundamental features of the subject.

Sophomore course. Three lectures and three hours of actual practice per week thruout the year. Credit of eight semester hours. Prerequisite for Accounting B.

- B. Advanced Accounting.**—This course deals with some of the more advanced phases of accounting, such as depreciation, the reserve, goodwill, deficiency accounts, realization and liquidation, cost accounting and auditing.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1917-1918 and alternate years.

- 7. Labor Problems.**—A study of the relation of the employee to the employer, including such subjects as child and woman labor, the sweating system, poverty, unemployment, immigration, industrial conciliation and arbitration, employer's liability laws, industrial insurance, profit sharing and co-

operation. The work of labor unions in relation to labor problems is emphasized.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1917-1918 and alternate years.

- 8. Business Organization.**—A study of the various types of business organization, their characteristics and history. Public policy with reference to corporations—especially transportation corporations—receives special attention.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1917-1918 and alternate years.

POLITICAL SCIENCE.

Professor Ashworth.

- 1. Comparative Government.**—Attention is first given to the background of the Federal and State constitutions. The formation, adoption and growth of the American Constitution is emphasized. A comparison of the government of the United States with the leading European governments is made.

Sophomore course for students in Groups III and VI. Sophomore Junior and Senior course for other students. Three periods, first semester. Credit of three semester hours.

Prerequisite for other courses in Political Science.

- 2. Political Parties.**—A study of the origin, history and platforms of the leading national parties with a consideration of such questions as the methods of nominating candidates, the conducting of campaigns, civil service reforms and election laws.

Sophomore course for students in Groups III and VI. Sophomore Junior and Senior course for other students. Three hours, second semester. Credit of three semester hours.

- 3. International Law.**—The development of the rules of international law, the rights and obligations of nations in times of war and of peace, the settlement of international disputes are considered.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1918-1919 and alternate years.

- 4. Constitutional Law.**—A study of the American Constitution viewed in the light of the Supreme Court decisions. This course is given for those who wish to make an extended study of the basic principles of United States Government.

Junior and Senior course. Three hours, second semester. Credit of three semester hours. Given 1918-1919 and alternate years.

BIOLOGY AND HYGIENE.

Professor Stahley and Mr. Nicholas.

Courses 1 to 7 are required studies in Group V. Course 8 is required of students in Municipal Engineering. All the courses are open as electives to those qualified to take them. The special pre-medical courses are 1, 2, and 3, required by the Pennsylvania State law. They are also valuable for general culture and as a preparation for teaching in secondary schools.

The work in all courses is carried on by lectures, demonstrations, dissections, drawings, daily quizzes, and stated examinations.

1. **General Biology.**—This course acquaints the student with microscopic technique and general laboratory methods, while he studies selected types of plants and animals, taken from the lower forms of life. The purpose is to ascertain fundamental facts of structure and life processes, with the significant relationships in the two great kingdoms of organic nature.

Junior course. Three periods for twelve weeks. Two hours of lectures, and six hours of laboratory work. Credit of four semester hours.

2. **Vertebrate Zoölogy.**—The essential features of their variations, in the vertebrate type of animals, are carefully considered, while representative forms are being dissected, beginning with the highest class, the Mammalia, and passing down to the lowest Chordates. Questions relating to comparative morphology and physiology of Vertebrates are freely discussed.

Junior course. Three periods for fifteen weeks. Two hours lectures, and six hours of laboratory work. Credit of four semester hours.

3. **Invertebrate Zoölogy.**—Selected types of Invertebrates are dissected. The basic structural scheme which obtains in the various groups, their adaptations to environmental conditions, and their economic value, are among the subjects which claim attention. The bearing of the theory of evolution in animal development is discussed during the year.

Junior course. Three periods for eight weeks. Two hours of lectures, and six hours of laboratory work. Credit of four semester hours.

- 4. Human Anatomy and Physiology.**—Special attention is given to osteology, joints, ligaments, and muscles. Tramond's preparations, consisting of real bony joints, with accurately placed artificial ligaments, and Azou's dissectible manikin, provide ample facilities for this part of the work. In this, as in all the branches of the course, physiological processes are constantly discussed.

Senior course. Three periods for seventeen weeks. Two hours of lectures, and six hours of laboratory work. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

- 5. Mammalian Histology.**—With the aid of prepared microscopic slides, the pupil studies the minute anatomy of the different tissues of the body. He also learns practically how to fix, harden, imbed, section, stain, and mount the important tissues.

Senior course. Three periods for twelve weeks. Two hours of lectures and six hours of laboratory work. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 6. Embryology.**—The principles of the maturation and fertilization of the germ elements are considered. The development of the chick is studied. Entire mounts are made, as well as mounts of serial sections of the incubating egg, from the first hour of incubation to the fifth day, when the organs are practically all formed.

Senior course. Three periods a week for six weeks. Two hours of lectures, and six hours of laboratory work. Credit of one semester hour.

Prerequisite, Courses 1, 2, and 3.

- 7. Botany.**—This course is in great part confined to the Spermatophyta, and continues the study of plants as begun in the General Biology course, where type forms from the Thallophytes, Bryophytes and Pteridophytes were considered. Morphology, physiology and ecology are among the topics mostly emphasized. The study includes lectures, recitations, practical laboratory work and field excursions. Considerable attention is paid to plant analysis in the spring months.

Junior course. Two periods thruout the year. One hour recitation and two hours of laboratory work. Credit of four semester hours.

- 8. Sanitation and Bacteriology.**—This is a course in municipal sanitation. The lecture part of the work is comprised in Course 9, second semester. The bacteriology of water analysis is pursued in a well-equipped laboratory.

Senior year. Laboratory, three periods for six weeks, one semester hour. Lectures, one semester hour. Total credit: two semester hours.

- 9. Personal and Public Hygiene** (Sanitary Science).—During the first semester are discussed the questions of the waste and conservation of individual vitality in their application to efficient citizenship. During the second semester consideration is given to those essential principles of public hygiene which are necessary in protecting the health of communities.

Lectures, one hour weekly thruout the Senior year. Credit of two semester hours.

- 10. Physical Culture.**—This end is sought under medical guidance in the Gymnasium during the winter months. A physical examination of each student is made when he enters college, and such kinds of gymnastic exercises are prescribed as seem desirable. The purpose is to encourage the promotion of health and physical vigor as necessary for successful mental application. A complete course of health lectures is annually given to the entering class.

Two weekly drills are required of all Freshmen from December 1 to March 15. Credits are allowed for attendance and attention.

CHEMISTRY.

Professors Breidenbaugh and Stover, Mr. Dickson and Assistants.

The courses in chemistry are not designed to prepare specialists in any department of the subject, but to give a general training in the science. The successful completion of these courses will prepare the student to enter on graduate or professional studies in any leading university, or qualify him for a more successful pursuit of any technical business, or fit him to teach chemistry in secondary schools.

The instructors are in daily attendance during the college term from 8 to 12 and from 1 to 4, except on Saturday afternoons.

- 1. General Chemistry.**—No previous acquaintance with the subject is required. Those offering chemistry for admission

will be allowed to substitute, as far as is best for the individual, from Course 2. The general principles and the fundamental laws of the science are included in the course, which consists of lectures, readings from approved text-books—such as Remsen's "College Chemistry," Newell's "Inorganic Chemistry for Colleges," Kahlenberg's "Outlines of Chemistry"—and laboratory work of which careful record in note-books is required. There are daily quizzes and frequent examinations. The last several weeks of the course are devoted to a practical review and examination in the determination of a certain number of substances, based on the results of previous study.

*Three lectures and six laboratory hours weekly for one year.
Credit of six semester hours.*

- 2. Qualitative Analysis.**—The student, following an outline prepared for the purpose, becomes acquainted with the general reactions of the elements of the several groups and from these data constructs the scheme of analysis which is applied in a number of determinations. There is constant supervision and personal conference over the work. Reference book, Fresenius' "Qualitative Analysis."

*One lecture and nine laboratory hours weekly for one year.
Credit of six semester hours.*

Prerequisite, 1.

- 3. Quantitative Analysis.**—While such lectures as are desirable are given, this is essentially a personal laboratory course. An assigned minimum of work is required. Reference book, Fresenius' "Quantitative Analysis."

Nine hours of laboratory work weekly for one year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 4. Organic Chemistry.**—Lectures and preparations occupy about one-half the course; the remainder of the time is given to ultimate and proximate analysis of organic substances and of animal and plant products.

Three lectures weekly during the first semester and nine laboratory hours weekly for one year. Credit of eight semester hours.

Prerequisite, 1 and 2.

- 5. Water and Sewage.**—Lectures, reading, and laboratory work on the character of water supplies and sewage products and their purification.

Two periods for one semester arranged to suit the class. Credit of two semester hours.

Prerequisite, 1, 2, and 3.

- 6. Cements.**—Reading and laboratory work on the nature of cements.

Two periods for one semester, arranged to suit the class. Credit of two semester hours.

Prerequisite, 1, 2, and 3.

- 7. Special Quantitative Methods.**—Students who are qualified are offered courses in advanced and applied analysis—such as mineral and ore analysis, the examination of food stuffs, etc.

Such hours as may be arranged for during Senior year, or during Junior year by such students as have completed other work in the department. Credit of six to ten semester hours.

- 8. Industrial Chemistry.**—A course of class-room exercises.

Three periods, second semester. Credit of three semester hours.

Prerequisite, 1, 2, and 3.

GEOLOGY AND MINERALOGY.

Professor Breidenbaugh.

- 1. Dynamical Geology.**—This course of lectures gives the student an acquaintance with the facts concerning inorganic geology, and a discussion of the dynamical agencies which have been operative in bringing the earth to the condition in which we now find it.

Two periods, first semester. Credit of two semester hours.

- 2. Historical Geology.**—A comprehensive discussion of the principles of evolution, with illustrations from historic geology.

The student is assigned readings from the text-books of Dana, Le Conte, Chamberlin and Salisbury, and other authors.

Field work and the preparation of papers from personal observation give practical application to the work. Frequent examinations are held.

Two periods, second semester. Credit of two semester hours.

- 3. Mineralogy.**—Following a short course of practical work in Crystallography, there is a series of determinations of not less than one hundred minerals by their physical and blowpipe characteristics.

Two periods thruout the year. Credit of four semester hours.

Prerequisite, Chemistry 1.

MATHEMATICS AND ASTRONOMY.

Professor Lamond and Mr. Rechard.

1. **Plane Trigonometry.**—Fundamental definitions, properties and analytical theory of trigonometric functions with the usual formulae; solution of trigonometric equations; theory and use of logarithms; solutions of triangles.

The course is preceded by a short review of Algebra, especial attention being given to the solution of equations.

Required of all Freshmen. Three periods two-thirds of a year. Credit of four semester hours.

2. **Solid Geometry.**—The usual text demonstrations, including the relations of planes and lines in space, the properties and mensuration of prisms, pyramids, cylinders, cones, the sphere and spherical triangle.

Required of Freshmen in Groups I-VI. Three periods one-third of a year. Credit of two semester hours.

3. **Advanced Algebra.**—Complex numbers, with graphical representation of sums and differences; determinants, including the use of minors and the solution of linear equations; numerical equations of higher degree with so much of the theory of equations as is necessary for their treatment, including Cardan's solution of the cubic and Horner's method.

Required of Freshmen in Groups VII-X, and of Sophomores in Groups IV and V. Elective for Sophomores in Groups I-III, VI. Three periods during the first semester. Credit of three semester hours.

4. **Plane and Solid Analytic Geometry.**—The locus of an equation; the line; the conic sections and other curves, their tangents, normals and areas; transformation of co-ordinates. Cartesian co-ordinates in space; the line; the plane; transformation of co-ordinates in space; the quadric and other surfaces.

Required of Freshmen in Groups VII-X. Four periods during the second semester. Credit of four semester hours.

5. **Elementary Analysis.***—This course is intended primarily for those who do not intend to continue the study of Mathematics, but who wish to obtain some knowledge of the

*Students who intend taking Math. 6 are advised to take Math. 4 instead of Math. 5 in preparation.

fundamental principles of Analytic Geometry and the Calculus.

Required of Sophomores in Groups IV and V. Elective for Sophomores in Groups I-III, VI. Three periods during the second semester. Credit of three semester hours.

- 6. Differential and Integral Calculus.**—Theory of limits; fundamental formulae of differentiation with applications, including maxima and minima and rates; series and the expansion of functions; other applications. The indefinite and definite integral; reduction formulae; applications including areas and volumes.

Required of Sophomores in Groups VII-X. Elective for those who have taken Math. 4 or 5. Four periods thruout the year. Credit of eight semester hours.*

- 7. Differential Equations.**—The theory, together with the principles and devices, which will enable the student to integrate the ordinary or partial differential equations he is likely to encounter.

Elective for those who have taken Math. 6. Three periods during the first semester. Credit of three semester hours. Omitted 1917-1918.

- 8. Theoretical Mechanics.**—The mathematical treatment of various topics in Mechanics.

Elective for those who have taken Math. 6. Three periods during the second semester. Credit of three semester hours. Omitted 1917-1918.

- 9. Introduction to Analysis.**—Topics from the Calculus not given in Math. 6, together with an introduction to the Theory of Functions of Real Variables.

Elective for those who have taken Math. 6. Two periods thruout the year. Credit of four semester hours.

- 10. Astronomy.**—A practical course in the determination of meridian, longitude, and time. and including the formulae of Spherical Trigonometry and the solution of spherical triangles.

Required of Juniors in Groups VII and VIII. Two periods for eight weeks, or the equivalent. Hours to be arranged. Credit of one semester hour.

PHYSICS.

Professor Parsons, Mr. Creager, and Mr. Cessna.

- A. Elements of Physics.**—A course covering in an elementary way the general subject of Physics, largely descriptive,

*Students who intend taking Math. 6 are advised to take Math 4, instead of Math 5, in preparation.

and requiring no previous knowledge of the subject. The instruction is given by lectures illustrated by experiment, recitations, problems, and laboratory work. This course is designed for those who can devote no more than one year to Physics, and not for those who will pursue the subject further.

Three lectures and three laboratory hours per week thruout the year. Credit of eight semester hours.

1. **General Physics.**—Mechanics of solids and fluids, properties of matter, sound and heat. The first part of a course in General Physics extending thru two years, required of all students in the Scientific and Engineering Groups, and forming the basis of the more specialized courses. The instruction is given by lectures illustrated by experiments, recitations, and problems assigned for work outside of the class. No previous knowledge of the subject is assumed, but a high school course is advantageous as preparation.

Three hours per week thruout the year. Credit of six semester hours.

2. **General Laboratory Physics.**—A laboratory course in mechanics of solids and fluids, properties of matter, sound and heat, designed to accompany Course 1. (Excepting in special cases the two courses must be taken together.) It is desirable, tho not required, that the student should have had an elementary laboratory course in Physics.

Three or six hours per week thruout the year. Credit of two or four semester hours.

3. **General Physics.**—Electricity and magnetism, and light. A continuation of Course 1, emphasizing particularly electricity and magnetism, and including the fundamentals of photography. Lectures, recitations, and problems.

Three hours per week thruout the year. Credit of six semester hours.

Prerequisite, Physics 1 and Mathematics 3, 4.

4. **Physical Measurements.**—Laboratory experiments in electricity and magnetism, and light. A continuation of Course 2 and designed to accompany Course 3. Some experiments in electrical measurements, diffraction and polarization of light, and photography, are included.

Three to six hours per week thruout the year. Credit of two to four semester hours.

5. **Mechanics.**—A lecture course, based on calculus, treating of statics, dynamics of translation and rotation, moments

of inertia, elasticity, and vibrations, and accompanied by laboratory work in these subjects.

Two lecture hours and three laboratory hours per week, first or second semester. Credit of three semester hours.

Prerequisite, Physics 1, 3, Mathematics 5.

- 6. Electrical Measurements.**—A lecture and text-book course in the theory of electricity and magnetism, electrical measurements and measuring instruments, accompanied by laboratory work.

Two hours lecture and class work, and three or six laboratory hours, first semester. Credit of three or four semester hours.

Prerequisite, Physics 1-4, Mathematics 5.

- 7. Recent Advances in Physics.**—Radioactivity, discharge of electricity thru gases, the electron theory, and other topics. Lectures illustrated by experiments.

Two lectures per week thruout the year. Credit of two semester hours.

Prerequisite, Physics 1 and 3, and Mathematics 5.

- 8, 9. Mathematical Physics.**—Lecture course in mathematical Physics for graduate students (or other advanced students). The two courses alternate in successive years, forming together a complete course, but the topics treated may vary from year to year. Such subjects as mechanics, hydrodynamics, the kinetic theory of gases, the theory of sound, electricity and magnetism, physical optics, and the electro-magnetic theory, are treated.

Two or three lectures per week thruout the year.

Prerequisite, Physics 1-4, and Mathematics 5, 6.

- 10. Advanced Laboratory Physics.**—This comprises all the advanced laboratory work not included in the preceding courses, and is designed for graduate students and others specializing in Physics. The experiments or problems assigned are variable and may include research on some assigned topic.

The course may be taken thru more than one year, credit being given proportional to the work done.

- 11. Physics Seminary.**—A meeting, for one hour a week thruout the year, of the advanced students, at which papers on assigned topics are presented, current topics are discussed, and reports given of recent work of investigators (obtained from reading the journals).

Credit of two semester hours.

LECTURESHIP ON CONSTITUTIONAL LAW.

Henry Wolf Bickl , Esquire.

Four lectures on the Constitution of the United States; including (a) a discussion of the American Doctrine of Constitutional Law, and (b) a consideration of the commerce clause, (c) of the clause forbidding the impairment by the States of the obligation of contracts, and (d) of the guaranties of personal liberty and equality contained in the Fourteenth Amendment.

LECTURESHIP IN SOCIOLOGY.

Mrs. Mary G. Stuckenberg has founded a Lectureship in Sociology in honor of her late husband, J. H. W. Stuckenberg, D.D., LL.D., by the terms of which the College will have annually a lecture on some phase of Sociology from the standpoint of Christian Ethics by specialists in this important field. The lecture is given at such a time as is convenient to the lecturer chosen for the year.

ENGINEERING COURSES

Full courses are offered in

**Civil Engineering, Mechanical Engineering,
Municipal Engineering, Electrical Engineering.**

All engineering students pursue the same subjects for the first two years. At the end of that time it is believed that most men will be able to make an intelligent choice between Civil and Municipal Engineering on the one hand, and between Mechanical and Electrical Engineering on the other. At the end of the third year a civil engineering student decides further between the general Civil Engineering course (Group VII) and the Municipal Engineering course (Group VIII). At the same point in his studies a mechanical engineering student decides between the course in Mechanical Engineering (Group IX) and that in Electrical Engineering (Group X).

Civil Engineering is an increasingly comprehensive term. Beside municipal engineering it includes among other subdivisions, topographic, railroad, and structural engineering. The Municipal (Sanitary) Engineering course is offered for those who wish to specialize somewhat in subjects relating more particularly to the problems of sanitation and civic betterment with which the engineering department of a modern city is concerned. The field for the mechanical engineer also has broadened of late, resulting in its subdivisions into branches of activity which call for technical knowledge in special fields. No attempt has been made in the following courses to meet these special demands, as it is the aim of the department to graduate men well grounded in the fundamentals and sufficiently broad in training to fill positions of some responsibility in any part of the field. Students interested in mechanical engineering are advised to follow Group IX unless especially interested in applied electricity; in that case they are recommended to the course in Electrical Engineering, Group X.

Engineering graduates not infrequently find employment in positions in which some knowledge of a branch of engineering other than that for which they have been trained is necessary or valuable. The engineering instruction is on this account designed to be broad and fundamental, and subjects which tend toward extreme specialization are not offered.

An increasing proportion of graduates in engineering engage

in callings more or less closely related to engineering, such as manufacturing, contracting, or commercial lines. In view of this there have been included in the engineering courses such subjects as will lay the foundations of a broad scientific education.

The following seven technical subjects underlie all engineering training, and are required of all students in Groups VII, VIII, IX and X.

1. **Elementary Mechanical Drawing.**—Use of instruments, orthographic, isometric and cabinet projections, simple sections, intersections and developments, lettering, sketching, tracing and blueprinting. Text-book, French's "Engineering Drawing."

Three hours thruout the year. Credit of two semester hours.

Note. The College provides drawing desks, boards, etc., but each student furnishes his own drawing outfit, costing about eighteen dollars. Students are urged to avoid the purchase of cheap instruments which soon become worthless. Engineering students use their drawing instruments throughout their course and for years afterward. The purchase of an outfit of good grade is therefore economy.

2. **Descriptive Geometry and Advanced Mechanical Drawing.**—

The first semester's work comprises descriptive geometry, problems relating to the point, line, and plane in space, followed by a thoro drill in sections, intersections, and developments, with applications to engineering and architectural problems. The instruction is designed to develop in the student the power of concise reasoning.

During the second semester, the work is a continuation of Course 1 and covers lettering, conventional signs, perspective, typical design, working drawings illustrating the use of emperical design, etc. Text-books, Tracy and North's "Descriptive Geometry," French's "Engineering Drawing," Hayes' "Emperical Design."

Two hours of recitation and four hours of drawing weekly, first semester; six hours of drawing weekly, second semester. Credit of five semester hours.

Prerequisite, Course 1.

3. **Mechanics (A). Statics and Dynamics.**—Forces in equilibrium, simple structures, translation and rotation, work, energy, power. Text-book, Fuller and Johnston's "Applied Mechanics."

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Physics 1 and 2, Mathematics 3 and 4.

- 4. Metallurgy of Steel.**—A lecture course on the metallurgy of iron and steel. Ores and their preparation, blast furnace operation, manufacture of steel by open hearth, Bessemer, crucible and cementation processes, re-manufacture into commercial shapes.

One lecture weekly, second semester. Credit of one semester hour.
Prerequisite, Chemistry 1.

- 5. Hydraulics.**—A study of the mechanics of water at rest and in motion, with applications to a variety of problems relating to the pressure of water and to its flow in natural and artificial channels, pipes, etc. Text-book, Merriman's "Treatise on Hydraulics."

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Engineering 3 and Mathematics 5.

- 6. Materials Testing.**—Recitation and laboratory course in the study of the properties of engineering materials. In the first semester the standard tests of cement, mortar, and sand are made and compared, supplemented by lectures on cement manufacture. The common tensile, compressive, and transverse tests on steel, timbers, and concrete are made and discussed. The solution of practical problems is emphasized. The first semester's work is required of all engineering students. During the second semester the remaining common materials are tested, and the change in the properties of iron and steel due to heat treatment is taken up. The work of this semester is required only of students in Groups IX and X. Text-book, Boyd's "Strength of Materials."

Two recitations and three laboratory hours weekly, first semester. Credit of three semester hours. Three laboratory hours weekly, second semester. Credit of one semester hour.

Prerequisite, Engineering 3 and 4, and Mathematics 5.

- 7. Elements of Electrical Engineering.**—The application of the fundamentals of electricity and magnetism to electrical engineering practice. Theory, structure, and operation of electrical machinery. Recitation work supplemented by simple laboratory experiments. Text-book, Timbie's "Elements of Electricity."

One recitation and three laboratory hours weekly, first semester; two recitations and three laboratory hours, second semester. Credit of five semester hours.

Prerequisite, Physics 3 and 4, and Engineering 3.

CIVIL AND MUNICIPAL ENGINEERING.

Professor Allen and Mr. Berryman.

- 11, 12. Surveying (A).**—The field work is done during a period of three weeks immediately preceding the beginning of the Junior year.* It consists of drill in the use of the more common surveying instruments, supplemented by daily recitations designed to co-ordinate the instruction. The remainder of the course consists of calculations and mapping done during term time. The calculations include those necessary in the ordinary office work of a land surveyor, while the mapping comprises plotting the notes of the survey made during the summer, tracing and blue-printing the map, and additional drill in plain lettering. Text-book, Breed and Hosmer's "Principles and Practice of Surveying," Vol. I.

Three weeks (145 hours) in August and September, and six hours of computation and drawing first semester. Total credit of four semester hours.

Prerequisite, Course 2.

- 13, 14. Surveying (B).**—The field work is done during a period of three weeks immediately preceding the beginning of Senior year.* Topographic surveying, using a variety of methods and instruments, including the plane table, supplemented by daily recitations. A short railroad survey and location. Adjustments of instruments. The office work, done in term time, includes instruction in topographic drafting and the use of topographic maps, also the treatment of various subjects in higher surveying. Text-book, Breed and Hosmer's "Principles and Practice of Surveying," Vol. II.

Three weeks (145 hours) in August and September, and six hours of drawing, first semester. Total credit of four semester hours.

Prerequisite, Course 11, 12.

- 15. Surveying (C).**—Required of students in Group IX; open to non-engineering students. A brief course in which a small survey is made, levels are taken, a map and a profile are plotted, some computing is done, etc.

Three hours of field work and drawing, weekly, first semester. Credit of one semester hour.

- 16. Railroads (A).**—A course in the mathematics of railroad curves, — simple, compound, and vertical; including

*The Summer Course in 1917 begins at 8 A. M. on Tuesday, Aug 28.

switches and spirals. Earthwork calculation and the construction of mass diagrams. Text-books, Allen's "Railroad Curves and Earthwork," and "Field and Office Tables."

Four recitations weekly, second semester. Credit of four semester hours.

Prerequisite, Course 11, 12.

- 17. Railroads (B).**—The necessary preliminary surveys are made during the preceding summer field work (Course 13). Course 17 includes making the plans, calculations, etc., involved in the preparation of a full report on the proposed construction, including its cost. Economics of railroad construction.

Six hours of drawing and computation weekly, second semester. Credit of two semester hours.

- 18. Mechanics (B).**—Stresses in framed structures, principally roof trusses and bridges of various types. Graphical and analytical methods of solution are employed. Text-book, Malcolm's "Graphic Statics."

Two hours of recitation and four hours of drawing weekly, first semester. Credit of two semester hours.

Prerequisite, Course 3.

- 19. Structural Design.**—A course in the strength of materials as applied to the analytical design of structures of wood and steel. Beginning with beams the student finally makes all the calculations necessary in the complete design of a plate girder and trusses of the riveted and pin connected types. Text-book, Spofford's "The Theory of Structures."

Given in the second semester, Junior year, and first semester, Senior year. Two hours recitation and four hours computation or drafting weekly in the Junior year; three hours recitation and six hours computation or drawing in the Senior year.

- 20. Structural Drafting.**—The making of detailed drawings for the component parts of a steel structure. Conformity with the best practice is required in the notation, and the drawings are carefully checked.

Six hours of drawing weekly, second semester. Credit of two semester hours.

- 21. Contracts and Specifications.**—The elements of contract law as applied to the mutual relations of engineer, contractor, and owner. Critical review of typical specifications and practice in specification writing. Text-book, Kirby's "Elements of Specification Writing."

One recitation weekly, second semester. Credit of one semester hour.

- 22. Masonry.**—Design and construction of stone and concrete structures, heavy foundations, arches, walls, and dams. Instruction is in part by recitation, but includes drafting-room work in the design of several typical structures. Text-book, Baker's "Masonry Construction."

Two recitations and three hours of drawing weekly, first semester. Credit of three semester hours.

- 23. Highways.**—Recitations on the design, construction, and maintenance of roads and pavements, with especial consideration of the exigencies of present-day traffic. Text-book, Blanchard and Drowne's "Highway Engineering."

Two recitations weekly, second semester. Credit of two semester hours.

- 24. Water Supply Engineering.**—The quantity and quality of water from various sources. Works for the collection and storage of water, for its purification and for its distribution. Text-book, Turneaure and Russell's "Public Water Supplies."

Two recitations weekly, second semester. Credit of two semester hours.

- 25. Sewerage.**—Various types of design and construction are discussed in recitations. Plans for a small sewer system are made by each student. Modern methods for the purification and disposal of sewage and garbage. Visits are made to plants under construction and in use. Text-book, Fowell's "Sewerage."

Two recitations weekly, second semester. Credit of two semester hours.

- 26. Civil Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, thruout the year. Credit of two semester hours. Open only to Seniors in Groups VII and VIII.

- 27. Civil Engineering.**—A series of lectures and discussions intended to give the student a general view of the field of civil engineering, and to help him to see the connection between the mathematical subjects of the Sophomore year and the practice of civil engineering.

One hour weekly, second semester. Credit of one semester hour. Required of Sophomores in Groups VII and VIII.

MECHANICAL ENGINEERING.

Professor Wing and Mr. ————

- 31. Shop Work (A).**—Simple exercises in the formation of green sand moulds, supplemented by lectures on modern foundry practice. Bench and lathe work in wood, elements of pattern making.

Six laboratory hours weekly, first semester. Credit of two semester hours.

- 32. Shop Work (B).**—Forge practice in iron and steel. Shaping, hardening, and tempering of tools. Machine and bench work in metals. Lectures on modern shop practice. Upon completion of the elementary work at the College, students are required to spend a specified number of hours as apprentices in some machine shop of approved grade in Gettysburg or vicinity.

One hundred laboratory hours, second semester. Credit of two semester hours.

- 33. Kinematics.**—Theory of mechanisms, instant centers, cams, gears, linkages, velocity and acceleration diagrams, etc. Recitation work supplemented by the solution of practical problems in the drawing room. Text-book, Barr and Wood's "Kinematics of Machinery."

Two recitations and six hours of drawing weekly, first semester. Credit of four semester hours.

Prerequisite, Course 2.

- 34. Machine Design. (A).**—An elementary course showing the application of the fundamentals of mechanics and kinematics to machine design. Selection of mechanisms for specified work, analysis of energy and force problems in machines, and proportioning of detailed parts from theoretical and practical considerations. Text-book, Kimball and Barr's "Elements of Machine Design."

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Course 6 (1st semester), 4, and 33.

- 35. Machine Design (B).**—Application of principles of Course 34 to the design of two typical machines, including all necessary computations; working drawings of most important parts, and a finished assembly drawing. Text-book, Kimball and Barr's "Elements of Machine Design."

One recitation and six hours of drawing weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 3½.

- 36. Heat Power Engineering (A).**—Thermodynamics of gases and vapors, theoretical gas cycles, application of theory to problems of commercial heat engines, engine performances and efficiencies. Text-book, Hirshfeld and Barnard's "Elements of Heat Power Engineering."

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Mathematics 5, and Physics 1 and 2.

- 37. Heat Power Engineering (B).**—A continuation of Course 36. Fuels, combustion, boilers, gas engines, steam engines and turbines, power house auxiliaries, etc. Efficiency and economy of operation. Selection and combination of elements for power houses. This study covers the theory necessary for Course 38. Text-books, Hirshfeld and Barnard's "Elements of Heat Power Engineering," and Gebhardt's "Steam Power Plant Engineering."

Two recitations weekly thruout the year. Credit of four semester hours.

Prerequisite, Course 36.

- 38. Power Plant Design.**—Design of a typical power plant, selection and arrangement of main units and auxiliaries. An outline drawing is made showing the location and arrangement of boilers, turbines, condensers, pumps, etc., the provision for coal and ash handling, and storage. Economic features of power house design emphasized. Reference book, Gebhardt's "Steam Power Plant Engineering."

Twelve hours of drawing weekly, second semester. Credit of four semester hours.

May be taken only in conjunction with Course 37.

- 39. Mechanical Engineering Laboratory.**—Calibration of common engineering measuring instruments, such as steam gauges, thermometers, indicator springs; determinations of quality of steam; measurements of power; efficiency tests of boilers, gas engines, pumps, etc. Computation periods.

Three laboratory hours weekly thruout the year. Credit of two semester hours.

Prerequisite, Course 36.

- 40. Mechanical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly thruout the year. Credit of two semester hours.

(Open only to Seniors in Group IX).

ELECTRICAL ENGINEERING.

Professor Wing and Mr. ———.

- 45. Theory of Electrical Machinery.**—Fundamentals of the electric and magnetic circuit; representation of alternating currents and voltages by vectors and complex quantities; study of the alternating current circuit; theory of transmission lines; transformers, alternators, synchronous and induction motors, direct current machines, etc. Text-books, Christie's "Electrical Engineering" and Gray's "Electrical Machine Design."

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 7.

- 46. Characteristics of Electrical Machinery.**—This course supplements the work of Course 45. Problems in alternating current circuits. Outline design and predetermination of performance characteristics of transmission lines, transformers, alternators, alternating current motors and direct current generators and motors. Practice is given in the use of standard hand books. Reference book, Gray's "Electrical Machine Design."

Two computing periods of three hours weekly thruout the year. Credit of four semester hours.

May be taken only in conjunction with Course 45.

- 47. Electrical Engineering Laboratory.**—Elementary and advanced experimental work in electrical engineering: the study of polyphase alternating current circuits, shape of A. C. waves, determination of the magnetic properties of steel and iron; commercial testing of alternators, transformers, synchronous motors, induction motors, D. C. machines, etc. Text-book, Karapetoff's "Experimental Electrical Engineering."

Six laboratory hours and one report weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 7.

- 48. Electrical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly thruout the year. Credit of two semester hours.

(Open only to Seniors in Group X).

Trips of Inspection.

Several short tours are arranged during the course for the inspection of engineering structures, power plants, shops, manufacturing establishments, etc., in the vicinity. Reports of such visits are prepared by each student from his individual notes.

Engineering Library.

A departmental library and reading room of reference books, periodicals, and technical reports is being built up in connection with the College Library. Students have access to the following publications:

"Engineering Record," "Municipal Journal," "Railway Review," "Engineering Magazine," "Machinery," "Power," "Electrical World," "General Electric Review," "Electric Journal," and the regular reports of the following societies: American Society of Mechanical Engineers, American Institute of Electrical Engineers, and National Electric Light Association.

Engineering Equipment.

For a detailed description of the equipment in engineering see page 124.

MILITARY SCIENCE AND TACTICS

Major Graham and Color Sergeant Allen.

As a part of the program for national preparedness, Congress by Act of June 3, 1916, authorized the establishment and maintenance in civil institutions of learning fulfilling certain requirements, of units of the Reserve Officers' Training Corps, so that in time of national emergency there may be a sufficient number of educated men, trained in military science and tactics, to officer and lead intelligently the large armies upon which the safety of the country will depend. Under the provisions of this Act the President of the United States has established an infantry unit, senior division, of the Reserve Officers' Training Corps in this College and has detailed a regular army officer to serve here as Professor of Military Science and Tactics and a noncommissioned officer to serve as his assistant. In order to encourage students to enter this corps said Act of Congress makes very liberal provisions furnishing the members free of charge all the needed equipment in arms, tentage, ammunition, uniforms, and, in the case of those taking the advanced course, additional uniforms, training camp expenses, and an allowance in cash equal to the regular army garrison ration. The work includes lectures and classroom work as well as military drill, target practice and gymnastic exercises. The mental as well as physical benefits which a student may derive from this course are obvious; and it supplies in the most approved form that element of training in discipline and obedience to authority which has been largely lacking in the educational system of our country. There is an increasing demand thruout the country for teachers of high school grades who are able to give military instruction.

The following arms, tentage, and equipment are issued by the Government for every student undergoing military training: 1 rifle (complete), 1 gun sling, 1 cartridge belt, 1 bayonet scabbard, 1 haversack, 1 canteen, 1 cup, 1 knife, 1 fork, 1 spoon, 1 meat can, 1 shelter tent half, 1 shelter tent pole, 5 shelter tent pins. Swords and scabbard with the necessary attachments are issued for the use of student officers and noncommissioned officers. Special rifles for gallery practice are furnished as well as special models for range practice. The following allowance of ammunition, targets and target supplies is issued to each member of the Corps:

(1) Forty rounds of rifle ball cartridges for each range, but not to exceed 120 rounds.

(2) Sixty rounds gallery practice cartridges, caliber .22.

(3) Twenty rounds of rifle blank cartridges.

(4) Targets and target supplies.

Distinctive insignia, to be worn on the upper part of the left forearm, is issued to each student to indicate his rank as a cadet, and additional insignia is issued to indicate his rating for excellence obtained during the course of instruction and also a badge for proficiency in target practice for those who can earn it.

The course in Military Science and Tactics is divided into two parts, each one requiring two years of work.

FIRST COURSE.

Any student electing this course must devote an average of at least three hours per week for two successive years to the work required (First Year and Second Year, pages 98-99). In addition to arms, tentage, and ammunition, the Secretary of War will furnish, free of charge to each member of the Corps, the following uniform:

1 breeches, woolen, olive drab, pair.

1 cap, olive drab.

1 coat, woolen, olive drab.

1 leggings, canvass, pair.

1 cap and collar ornament, set.

1 shoes, russet, pair.

This uniform will be worn at all times when college is in session.

ADVANCED COURSE.

When any member of the Reserve Officers' Training Corps has completed (here or elsewhere) the first two academic years of service, and has been recommended for further military training by the President of the College and the Professor of Military Science and Tactics, he will be furnished by the U. S. Government commutation of subsistence (an allowance) equal to the regular garrison ration prescribed for the Army. This allowance now amounts to about 40 cents per day. A student electing to take this advanced course will be required to devote an average of at least five hours per week to the work during the remainder of his college course (Third Year and Fourth Year, pages 99-100). A considerable portion of this instruction will be given in other depart-

ments of the college in the classes in history, economics, political science, hygiene, sanitation, etc., so that the five required hours per week will, as a rule, not add appreciably to the time required during the first two years. He must also attend the training camps prescribed by the Secretary of War during the third and fourth years, his transportation to and from these camps, and his subsistence while there being paid for by the U. S. Government. He will be provided with arms, ammunition and uniform, as during the first two years, and in addition the following uniform for camp service:

- 1 hat, service.
- 1 cord, hat.
- 2 breeches, cotton, olive drab, pairs.
- 2 shirts, flannel, olive drab.

OUTLINE OF THE COURSES IN MILITARY SCIENCE AND TACTICS.

First Year.

1. **Military Art.**—Three hours a week during the first semester.

(a). **Practical.** Weight 10.

Physical drill (Manual of Physical Training—Koehler); Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad and Company, close and extended order. Preliminary instruction sighting position and aiming drills, gallery practice, nomenclature and care of rifle and equipment.

(b). **Theoretical.** Weight 4.

Theory of target practice, individual and collective (use of landscape targets made by U. S. Military Disciplinary Barracks, Fort Leavenworth, Kans.); military organization (Tables of Organization); map reading; service of security; personal hygiene.

2. **Military Art.**—Three hours a week during the second semester.

(a). **Practical.** Weight 10.

Physical drill (Manual of Physical Training—Koehler); Infantry drill (U. S. Infantry Drill Regulations), to include School of Battalion, special attention devoted to fire direction and control; ceremonies; manuals (Part V, Infantry Drill Regulations); bayonet combat; intrenchments (584-595, Infantry Drill Regulations); first-aid instruction; range and gallery practice.

(b). **Theoretical.** Weight. 4.

Lectures, general military policy as shown by military history of United States and military obligations of citizenship; service of information; combat (to be illustrated by small tactical exercises); U. S. Infantry Drill Regulations, to include School of Company; camp sanitation for small commands.

Second Year.

3. Military Art.—Three hours a week during the first semester.**(a). Practical.** Weight 10.

The same as Course 2(a). Combat firing, if practicable, but collective firing should be attempted in indoor ranges by devices now in vogue at United States Disciplinary Barracks.

(b). Theoretical. Weight 4.

United States Infantry Drill Regulations, to include School of Battalion and Combat (350-622); Small-Arms Firing Regulations; lectures as in (b) Course 2; map reading; camp sanitation and camping expedients.

4. Military Art.—Three hours a week during the second semester.**(a). Practical.** Weight 10.

The same as Course 2(a); signaling; semaphore and flag; first-aid. Work with sand table by constructing to scale intrenchments, field works, obstacles, bridges, etc. Comparison of ground forms (constructed to scale) with terrain as represented on map; range practice.

(b). Theoretical. Weight 4.

Lectures, military history (recent); service of information and security (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping expedients); marches and camps (Field Service Regulations and Infantry Drill Regulations).

Third Year. Advanced Course.

5. Military Art.—Five hours a week during the first semester.**(a). Practical.** Weight 13.

Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises laid down for the unit. Military sketching.

(b). Theoretical. Weight 11.

Minor tactics; field orders (studies in minor tactics, United States School of the Line); map maneuvers.

Weight 8.

Company administration, general principles (papers and returns). Weight 1.

Military history. Weight 2.

6. Military Art.—Five hours a week during the second semester.**(a). Practical.** Weight 13.

Same as (a) Course 5. Military sketching.

(b). Theoretical. Weight 11.

Minor tactics (continued); map maneuvers. Weight 8.

Elements of international law. Weight 2. Property accountability; method of obtaining supplies and equipment (Army Regulations). Weight 1.

Fourth Year. Advanced Course.

7. Military Art.—Five hours a week during the first semester.

(a). **Practical.** Weight 13.

Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises scheduled for the unit. Military sketching.

(b). **Theoretical.** Weight 11.

Tactical problems, small forces, all arms combined, map maneuvers; court-martial proceedings (Manual for Courts-martial).

International relations of America from discovery to present day; gradual growth of principles of international law embodied in American diplomacy, legislation, and treatise.

Lectures: Psychology of war and kindred subjects.

General principles of strategy only, planned to show the intimate relationship between the statesman and the soldier (not to exceed 5 lectures).

8. Military Art.—Five hours a week during the second semester.

(a). **Practical.** Weight 13.

Same as Course 7(a).

(b). **Theoretical.** Weight 11.

Tactical problems (continued); map maneuvers. Rifle in war.

Lectures on military history and policy.

No student electing one of these courses will be promoted to the next higher class in College or graduated from College unless he has completed the work of the course for the previous year to the satisfaction of the Professor of Military Science and Tactics.

The appointment of cadet officers and noncommissioned officers for the Corps are made from members of the Junior and Senior Classes in College and from members taking post-graduate courses, provided there is a sufficient number. It is the intention to give the student entering the advanced course the benefit of an opportunity of training in a responsible rather than in a subordinate position.

No military duties in addition to the training courses outlined are required from members of the Reserve Officers' Training Corps. If any student desires to serve as a member of any branch of the armed forces of the country he must enlist according to the regulations like any other recruit.

A student having completed these courses will on graduation from College be eligible for appointment to the Officers' Reserve Corps as a temporary second lieutenant of the regular army in times of peace for purposes of further instruction, for a period not exceeding six months, with all the allowances now provided by law for that grade, but with pay at the rate of \$100 per month.

For those who aspire to enter the ranks of regular army officers from civil life the Reserve Officers' Training Corps in our College offers unexcelled advantages and opportunities.

Orders No. 1.

I. The Corps of Cadets in this Institution is organized into two battalions of three companies each. The First Battalion will consist of Companies A, B, and C, and the Second Battalion, D, E, and F.

II. The members of the Band will be distributed among the first five companies, and they will drill with those companies the same as other members of the companies, except when it is desired to have them form as a Band for ceremonies and for instruction as a Band.

III. The following appointments of cadet officers and non-commissioned officers, with the approval of the President of the College, are announced:

First Battalion.

Major, V. W. Bennett
First Lieutenant and Adjutant, C. T. Hallenbeck

Second Battalion.

Major, J. S. Nicholas
First Lieutenant and Adjutant, G. H. Trundle

Battalion Non-commissioned Staffs.

Sergeant Major, L. T. Stratten
Sergeant Major, C. S. Farmer
Color Sergeant, D. E. Maxwell
Color Sergeant, J. M. Lentz
Drum Major, C. S. Montgomery

Company A.

Captain, E. A. Lakin
First Lieutenant, S. S. Froehlich
Second Lieutenant, P. E. Stermer

Company B.

Captain, L. R. Mead
First Lieutenant, J. J. Morris
Second Lieutenant, E. E. Cadman

Company C.

Captain, Aaron McCreary
First Lieutenant, F. Correa
Second Lieutenant, M. Ashton

Company D.

Captain, J. Croll
First Lieutenant, R. W. McCreary
Second Lieutenant, J. C. Bennett

Company E.

Captain, W. E. Morrison
First Lieutenant, W. C. Campbell
Second Lieutenant, B. F. Lamont

Company F. (Gettysburg Academy Company.)

Captain, E. J. Eyler
First Lieutenant, L. N. Snyder
Second Lieutenant, Chas. Gruber

First Sergeants.

Company A, G. H. Bowers
Company B, J. R. Embick
Company C, A. H. Zeilinger
Company D, W. F. Haldeman
Company E, R. L. Shearer
Company F, H. A. Hesser

Company Quartermaster Sergeants.

Company A, N. W. Kunkel
Company B, J. R. Fink
Company C, L. W. Slifer
Company D, J. H. Braunlein
Company E, J. D. Geiser
Company F, J. E. Enders

Band.

Leader, I. A. Williams
Assistant Leader, D. M. Hefflefinger
Sergeants, F. W. Sunderman and W. A. Boyson
Corporals, W. E. Rebuck and W. M. McNabb

Sergeants.

R. V. Hankey	C. M. Sincell	H. F. Ruth
A. R. Carlson	M. J. Stoney	C. L. Venable
J. V. Cannen	A. K. Clemens	R. H. McMann
A. P. Ringler	R. L. Hesson	D. M. Funk
C. W. Duncan	H. F. Bink	H. B. Young
G. W. Schillinger	P. E. Loudenslager	D. F. Lybarger

Corporals.

R. M. Laird	N. F. Fisher	J. W. Drawbaugh
E. H. Buck	C. M. Buffington	P. B. Shearer
W. C. Gauger	M. L. Craig	H. W. Lins
F. E. Howard	S. E. Duff	H. N. Finn
B. Gehauf	C. M. Sherer	C. F. Snyder
J. M. McCollough	A. W. Glunt	L. P. Miller
L. D. Matter	L. R. Gingrich	G. W. Graham
L. K. Scheffer	L. A. Gotwald	H. W. Lambert
C. M. Wible	M. H. Secrist	G. C. Cable
H. L. Saul	W. E. Stonesifer	H. S. Routson
S. D. Eberly	C. A. Hamil	C. L. Zerbe
H. A. Brown	H. L. Creager	H. C. McCreary

F. L. GRAHAM,
Major, U. S. A., Retired.

GENERAL INFORMATION

The College aims to develop the greatest possible individuality and the highest manhood of the student. The prevailing influences are such as tend to lead young men to an active Christian life and to a full realization of their personal responsibilities. The immediate supervision of the students is in the hands of the President and Dean with the Class Advisers.

CLASS ADVISERS.

A professor is appointed as Adviser for each class. The members of the class present any request to the Faculty thru their Class Adviser and confer with him on personal and college matters (see page 13).

STUDENT GROUP ADVISERS.

The head of each Department acts as the adviser of all the students having a major in his Department. He is known as the Group Adviser. He exercises oversight in the student's selection of electives and in the general character of his work. The Group Advisers are as follows: Group I, Professor Biklé; Group II, Professor Grimm; Group III, Professor Valentine; Group IV, Professors Breidenbaugh and Parsons; Group V, Professor Stahley; Group VI, Professor Ashworth; Groups VII and VIII, Professor Allen; Groups IX and X, Professor Wing.

STUDENT COUNCIL.

Without lessening its authority and responsibility, the Faculty has delegated certain duties in government to the student body as an exercise in self-government. The students act through a Student Council of four Seniors, three Juniors, two Sophomores, and one Freshman, elected by their respective classes. The Council acts in

certain matters of discipline, and in matters concerning the general welfare of the student body and is a medium of communication between the students and the Faculty. Hazing in any form is forbidden. To have or to drink intoxicating beverages or to frequent places where such beverages are dispensed is forbidden.

TERMS AND VACATIONS.

The college year of 35 weeks is divided into two semesters. The first semester begins at 11 A. M. on the third Wednesday in September and continues, with recesses at Thanksgiving and Christmas, to the first Saturday of February; the second semester begins when the first semester ends and continues, with an Easter recess, to Commencement Day, the second Wednesday of June. The closing days of each semester are devoted to examinations.

ATTENDANCE.

Every student is required to attend on week days a prayer service at 12 M., in Brua Chapel. On the Lord's Day attendance is required at the morning service in the College Church. Those affiliated with other denominations than the Lutheran are, on request of their parents, granted permission to attend elsewhere. Ten per cent absences are allowed from chapel and church services each semester under the rules governing absences from class work.

Each student is allowed individually ten per cent absences from class room work in each course each semester. Fractions are not counted and absences may not exceed four in any course during a single semester.

A further allowance of absences may be granted to members of athletic teams and musical organizations, to participants in literary contests, and to representatives of societies for the purpose of attending conventions, but

such extra allowance may in no case exceed five per cent.

Absences are reckoned from the first day of the first semester. Any absence on the two days preceding and the two days following any recess is counted as two absences.

If a student has further absences from the work of any instructor, the instructor may impose extra work or may exclude the student from the examination in the subject in which the absence has occurred.

Unexcused absences count as zero on grade.

Absences are not allowed for announced examinations. Such absences can be excused only by action of the Faculty, and the substitute examination will be held at such time as the instructor shall appoint.

Gymnasium work of two periods weekly through the winter season, extending from Dec. 1 to Mar. 15, is required of the Freshman class, special cases for sufficient reasons excepted. Two absences are allowed for the season. Credits are given for attendance and attention, and any shortage in credits due to absences or lack of interest must be made up later.

ELECTIVES.

A student having electives must deposit with the Registrar, within the first two days of the year, a written list of his electives, bearing the endorsement of the student's Group Adviser and of the instructors concerned. After the first week of the year changes in electives can be made only when approved by the Faculty, under such conditions as may be determined in each case. No regular student may drop an elective subject without faculty permission; failure to secure such permission will be regarded as a deficiency in the subject.

EXAMINATIONS.

Examinations are held in all subjects at the close of each semester or when, during the term, a subject is completed. Instructors may hold topical or quiz examinations at the time of any of the regular appointments with the class. Absences from these examinations are governed by the rules given above.

CONDITIONS AND DEFICIENCIES.

Freshman entrance conditions must be satisfied by the beginning of the Sophomore year.

A student whose grade in any course is reported as deficient at the close of a semester must present himself for re-examination at the beginning of the next semester; failing in this examination he must repeat the semester's work in that course. The matter of re-examinations is governed by the following rules:

1. Re-examinations for those students whose grade, as reported to the Registrar at the close of the previous semester, is "E" or "incomplete," shall be held at such a time as the instructor shall appoint, not later than October 10 in the first semester and not later than March 1 in the second semester.

2. Re-examinations must be given by the instructor at such a time as not to conflict with any of the regular classwork of the student.

3. A student may be allowed, upon written permission of the instructor, approved by the group adviser, to defer the re-examination until the final examination at the end of the semester's work in the next succeeding class in the given subject.

4. If the student fails to pass the re-examination given under rules 1 or 3, he must repeat the semester's work in the given course.

5. Failure to report for the re-examination at the time appointed will count as a failure in the examination

unless, owing to sickness or urgent necessity, the faculty allow another re-examination.

A student who at the beginning of any college year continues deficient in more than one third of a year's work will be enrolled with the class in which the deficiency occurs. The student will not be advanced in enrollment with his class until the deficiency has been removed.

A student deficient at the beginning of a year in courses aggregating twelve semester hours will be required to drop a corresponding number of semester hours in the regular work of the year.

RECORDS.

A record of scholarship and deportment, under the care of the Registrar, is kept for each student. The grades of scholarship are designated as follows: A (excellent), B (good), C (fair), D (poor, barely passed), E (failed, but entitled to another examination), F (failed utterly and must repeat with the next class), and Inc. (incomplete).

REPORT.

A report from the above record is sent to the parents or guardian of each student at the end of each semester. About the middle of each semester notice is given to the student and to his parents or guardian if his work is of low grade or if he has an excessive number of absences.

REQUIREMENTS FOR GRADUATION.

Every student completing the prescribed work of any group of studies and in addition enough electives to aggregate at least one hundred and twenty-eight semester hours, will receive the degree pertaining to that group, either Bachelor of Arts or Bachelor of Science; provided, however, that no student in any semester shall carry less than fifteen semester hours.

No student will be graduated who is not present at Commencement, unless he be excused by the Faculty.

CERTIFICATES.

Partial and Special Course students, as well as those who withdraw before completion of a full course of study, are entitled to a certificate giving a copy of the college record. No credits for college work will be certified to unless the usual college financial obligations have been met (see page 115).

MASTER'S DEGREE.

The degrees of Master of Arts and Master of Science are conferred on those having the Bachelor's degree from approved colleges, according to the following regulations:

1. The Master's degree is conferred upon graduate students on the completion of at least one year of resident work. Such students must present to the Faculty Committee on Advanced Degrees, for approval, a plan of advanced studies involving the equivalent of at least twenty-four semester hours. It is recommended that at least one-half of the course be devoted to some one subject.

2. The Master's degree is also conferred on non-resident graduates of this College. These must, however, at the beginning of their candidacy arrange with the Faculty Committee on Advanced Degrees (see page 14) a systematic course of study, and must report at stated times to the head of the department in which the subjects have been chosen.

In either case the candidate must pass examinations satisfactory to his instructors and to the committee. Previous to the final examinations the instructors in charge shall file with the committee a statement of the work done by the candidate. If the report is satisfactory, the candidate will be permitted to present himself for final examination. He shall also be required to prepare an essay or thesis upon an approved subject bearing on his princi-

pal study. This essay or thesis must be completed and submitted to the committee at least one month prior to the Commencement at which the degree is to be conferred; if accepted, it becomes the property of the College.

Graduates of this College who have devoted at least one year to graduate work in residence at other colleges or universities and have fulfilled the above requirements may be admitted by the Faculty to the Master's degree. It may also be conferred upon college graduates who have completed courses of advanced study in professional schools, provided that the work done be in kind, grade, and amount equivalent to that required of other candidates for the same degree and that it has not been offered to satisfy the requirements for a professional degree.

HONORS.

The following honors will be awarded at the close of each year:

A. Final Honors will be awarded to members of the graduating class meeting the following conditions:

General Final Highest Honors will be awarded to those students who have maintained thruout their four years the grade of A in all of their studies.

General Final Honors will be awarded to those students who have maintained the grade A in at least half of the work of their four college years and have not fallen below the grade B in their studies.

Students entering at the beginning of the Sophomore year will be awarded the same honors if for three years they meet the above requirements as to grade.

B. Department Final Honors. If the head of any department recommends a student taking a major in that department as having shown special excellence in that work, the student shall be awarded Final Honors in that department provided he does not have a grade below B in more than three courses in other departments.

C. Class Honors for Freshman, Sophomore, Junior,

and Senior Years. Highest Honors for the designated year will be awarded to those members of these classes who have maintained the grade A in all of their studies thruout the year.

Class Honors for any particular year will be awarded to those members of the class who have maintained the grade A in at least half of the work of the year and do not have a grade below B in any of their studies for the year.

These awards are announced at Commencement and published in the next Catalog number of the BULLETIN.

PRIZES.

Muhlenburg Freshman Prize. The interest of a fund of five hundred dollars, contributed by F. A. Muhlenburg, D.D., LL.D., a former professor in this College, is given at the close of each year to that member of the Freshman Class who is found to have attained the highest grade of scholarship in Group I.

Baum Mathematical Prize. Charles Baum, M.D., Ph.D., Class of 1874, of Philadelphia, has contributed five hundred dollars, the income from which is to be given annually to that member of the Sophomore Class who shows the greatest proficiency in Mathematics.

Hassler Latin Prize. Mr. Charles W. Hassler furnished a fund, the interest of which is annually expended for the purchase of a Gold Medal, to be presented to that student of the Junior Class, who, at the end of the year, shall be rated as the best Latin scholar.

Graeff Prize. This prize was founded by Mr. John E. Graeff, Class of 1843. The interest on a fund of \$500 is awarded for the best English Essay from a member of the Senior Class, on a subject previously assigned. The decision is made by a committee appointed by the Professor of English.

The requirements in connection with the Graeff prize in English are as follows:

1. Each member of the Senior Class shall, in order to

complete the requirements for graduation, write and submit, on or before May 1 of the Senior year, an original essay in English, in length not less than 1500 words nor more than 3,000.

2. Each essay may be submitted in competition for the Graeff Prize; provided that in such case the subject shall be the subject announced in that contest.

3. Every essay not submitted in competition for the Graeff Prize shall be written in connection with the work of one of the regular departments of instruction and on a subject approved by that Department; and shall be finally submitted to the English Department.

Prizes in Debate. The Literary Societies of the College provide three prizes of \$36, \$24, and \$15, respectively, for the encouragement of skill in debating. The first contest takes place about the middle of November between teams chosen by the Sophomore and Freshman Classes, respectively, and the winning team is rewarded with \$15. The second contest between the winning team and a team from the Junior Class, takes place about the middle of March, and the team that wins this contest receives \$24. The third contest, between the second victors and a team from the Senior Class, takes place about the middle of May, and the winners of this contest receive \$36. Winners of the prize of \$36 are excluded from further competition.

Elinore Taylor Brewer Greek Prize. The Class of 1883 has contributed the sum of five hundred dollars, the income from which is annually awarded as a prize to that member of the Sophomore Class who has done the best work in the regular Sophomore Greek course.

No student shall be eligible to any honor or prize unless he has had at our own College all the work required of all students in all groups for the year or years for which the honor or prize is awarded; and (unless substitutions have been approved at the time by special Faculty action) he must have had also all the work required in

his group for the year or years for which the honor or prize is awarded.

SCHOLARSHIPS AND AIDS FOR STUDENTS.

Endowed scholarships worth \$30 each, and a limited number of scholarships worth \$50 each, are awarded annually to deserving students by the Finance Committee of the Board of Trustees. All applications for these scholarships must be made in writing and must state in full the reasons for the request. Such applications must be handed to the President before October 1 of the college year.

An endowment fund of \$5,000 for the aid of worthy and needy students has been established by Mr. C. H. Boyer as a memorial to his father, Rev. Matthew G. Boyer, D.D., '65, for over eighteen years a most faithful and efficient member of the Board of Trustees of the College. The income from this fund is divided into ten scholarships of \$25 each, awarded annually. Applications for this aid must be in writing addressed to Mr. C. H. Boyer, 29 La Salle St., Chicago, Ill., or to the President, before October 1 of the college year.

The Parent Education Society of the General Synod controls ten scholarships, worth \$30 each, which are open to young men preparing for the ministry in the Lutheran Church. Applications for the use of these scholarships should be made to the Chairman of the Scholarship Committee, J. A. Singmaster, D.D., Gettysburg, Pa.

A number of other \$30 scholarships have been endowed and are controlled by congregations, synods, and individuals. The Gettysburg School Board controls such a scholarship established by C. W. Thompson, Esq., of Lebanon, Pa. The authorizations from those controlling these scholarships must be handed to the President before October 1 of the college year.

A considerable number of students earn part of their college fees by caring for halls and class rooms and by doing other work about the campus and buildings.

Twenty-five cents an hour is allowed for these services. All applicants for such employment must hand a written request for it to the President before October 1 of the college year.

Upperclassmen are employed as proctors and caretakers of the various college buildings and as assistants in the laboratories. One is employed to have charge of the Reading Room. These appointments are made by the Faculty; and applications for such positions must be made in writing and must be in the hands of the President before May 1 of the preceding college year.

There are many opportunities in the town of Gettysburg for students to earn money. Rev. S. F. Snyder, Assistant to the President, will be glad to assist those who desire such outside employment. Many students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College. Some of the students are granted allowances by the Athletic Council for work and supervision in the Gymnasium and on the Athletic Field. A number of students earn their board by managing student eating clubs, of which there is a large number, or by waiting on the table. Others earn money by acting as newspaper correspondents.

Any student wishing to engage in business or to undertake employment during term time is required to obtain permission from the President or Dean. Any violation of this rule is regarded as a misdemeanor.

The children of clergymen are allowed a reduction of one-half of the tuition.

TREASURER'S BILLS.

The bills of the College Treasurer are made out for each semester and include half of each item for the college year.

No student will be graduated or receive honorable dismissal until all financial obligations to the College and for class publications and other student interests are settled,

except when a student has registered a timely protest with the Faculty and the claim for relief has been allowed.

COLLEGE FEES.

A Registration Fee of \$5 is required on entering College and is payable to the Registrar.

The annual charge for Tuition is \$100.

In any course pursued for a Master's degree the charge for Tuition is \$75, when all the instruction has been given by members of the College Faculty. Of this \$25 is considered as a Registration Fee and is payable in advance, the balance being due one month previous to the date set for the conferring of the degree. Laboratory charges are extra. When the Master's degree is taken *in absentia* the total fee is \$25 payable in advance. Students in the Theological Seminary at Gettysburg may become candidates for the Master's degree by paying the regular registration fee of \$25; they are exempt from the payment of tuition exclusive of possible laboratory fees.

The Reading Room Fee is \$1.50.

The annual Gymnasium and Athletic Fee is \$8. This gives the student free admission to all intercollegiate games in Gettysburg.

ANNUAL LABORATORY FEES.

Based on three laboratory periods per week these are:

Biological Laboratory	\$14.00
Chemical Laboratory	18.00
Physical Laboratory	12.00
Mineralogy for the course	3.00
Botany for the course	4.00
Bacteriology for the course	5.00

In addition to the Chemical Laboratory Fee a charge is made for apparatus broken or not returned in good condition. In the Physical Laboratory an additional charge is made for material used and any damage done to apparatus.

ANNUAL ENGINEERING FEES.

Junior year	\$15.00
Senior year	15.00
Summer Course in Surveying	10.00

In addition to these engineering fees a charge is made for apparatus broken or not returned in good order. A charge is also made for engineering apparatus used by students who do not pay the annual engineering fees.

BOARDING.

The College does not maintain a dining hall. The students receive excellent board in clubs and with private families at a cost of from \$3 to \$4 per week.

ESTIMATED COST OF A YEAR IN COLLEGE.

The expenses of a college student depend largely on the training and habits of the individual. To aid the student rooming in a College dormitory to calculate the probable cost of a year in college at Gettysburg the following estimates are submitted:

(A). ITEMS ON COLLEGE BILL.

	Low.	Moderate.	Liberal
Tuition	\$100.00	\$100.00	\$100.00
Reading Room Fee.....	1.50	1.50	1.50
Room rent and heat (half room)	10.00	25.00	40.00
Gymnasium and Athletic fee	8.00	8.00	8.00
Electric light (half room) ..	2.45	2.45	4.90
Payable to Treasurer	\$121.95	\$136.95	\$154.40

(B). OTHER EXPENSES.

Board for 35 weeks	\$113.75	\$122.50	\$140.00
Laundry	15.00	18.00	20.00
Books and stationery.....	15.00	18.00	20.00
Est'd cost for college year	\$265.70	\$295.45	\$334.40

To the above should be added laboratory or engineering fees in case the student takes courses involving such charges.

COLLEGE DORMITORY ROOMS.

The following rules govern the assignment of dormitory rooms in Pennsylvania Hall, Cottage Hall, McKnight Hall, and Thaddeus Stevens Hall.

Non-resident students are required to room in the college dormitories unless excused by the Committee on Dormitory Rooms. A non-resident student rooming outside of the dormitories will be charged \$7.50 each semester for this privilege unless there are no dormitory accommodations available or for special reasons this charge is remitted by the Faculty.

No reservations of room beyond the actual needs of the students are permitted. No student is allowed to change his room or to take in a roommate without permission from the Committee on Dormitory Rooms and if allowed a new rental contract must be signed.

RESERVATIONS OF ROOMS BY MEMBERS OF THE STUDENT BODY.

All rooms are declared vacant May 1 of each year. On this date the reservation of rooms for the next college year begins. Students desiring to remain in the rooms that they have been occupying have that right provided they make application and sign the rental contract at the Registrar's office before May 8. After this date all rooms not reserved in this manner are open for assignment, on the days announced by the Registrar, to the members of the several classes in the following order: Juniors, Sophomores, Freshmen. Within the respective classes the order of choice and assignment is determined by lot conducted by the Registrar.

RESERVATION OF ROOMS BY NEW STUDENTS.

Rooms not reserved before May 15 will be available for assignment, in the order of the applications, to new students desiring to enter College the following September. The Registrar will reserve rooms for such students by correspondence if he is informed, at least approximately, of the kind of accommodations desired and whether or not a roommate is wanted. A deposit of five dollars with the Registrar is required from every new student reserving a room, which deposit will be deducted from his first semester bill. The rental contract involved may be signed at any time before the opening of College. Applications for such reservations should be made as early as possible both for the purpose of securing a satisfactory room and to relieve the rush at the opening in September.

ASSIGNMENT OF ROOMS IN THE ATHLETIC FIELD HOUSE.

The assignment of rooms in the Athletic Field House is made by the Athletic Council. Applications for these rooms must be made in writing and sent to Mr. S. F. Snyder, Graduate Athletic Manager, Gettysburg, Pa., not later than May 7. Assignments to the new students entering in September will be made later in the order of the applications.

DORMITORY ROOM FURNITURE.

The rooms in Thaddeus Stevens Hall and the Athletic Field House are furnished by the College; all other rooms are furnished by the occupants. Students graduating from College or changing from one room to another usually sell their furniture to the new occupants at a fair price mutually agreed upon. This plan is regarded highly desirable by the college authorities. The Finance Committee of the Board of Trustees has engaged a com-

petent appraiser who has no direct interest in connection with the College to determine the value of the furniture in any room when asked to do so. When students are unable to agree on the price for the furniture in a room, this appraiser will serve as an expert to adjust the matter. Any failure to make an adjustment on the basis of the findings of the appraiser must be referred to the Committee on Dormitory Rooms for final action.

ROOM RENT.

The charge for room rent, including steam heat, is given below for each room in the above-mentioned dormitories, and covers the period commencing the Saturday before College opens in September and ending the Saturday after College closes in June, with the exception of the Christmas vacation. The occupants of a room pay equal parts of the rental. Not more than two students are allowed to occupy one room or suite except in the case of some of the larger suites. In Pennsylvania Hall the designations are E for east division, M for middle division, and W for west division. McK indicates McKnight Hall; C Cottage Hall; T Thaddeus Stevens Hall; F, Athletic Field House.

\$18.00: 255, 256, C.

\$20.00: 106, 108, W; 120, 122, E; 357, 358, 360, C.

\$22.00: 105, 107, W; 119, 121, 123, E.

\$25.00: 353, 354, 362, C.

\$26.50: 103, W; 125 E.

\$27.50: 101, W; 127, E.

\$30.00: 340, McK; 270, F.

\$35.00: 111, 117, 118, M; 140, McK; 361-363, C; 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, T.

\$37.50: 104, W.

\$42.00: 206, 208, 306, 308, 406, 408, W; 210, 410, M; 220, 222, 224, 320, 322, 324, 420, 422, 424, E.

\$44.00: 205, 207, 305, 307, 405, 407, W; 219, 221, 223,

319, 321, 323, 419, 421, 423, E; 333, 334, 335, 336, 343, 344, 345, 346, McK.

\$45.00: 153, 359, C.

\$48.00: 240, McK.

\$49.50: 337, 338, 341, 342, McK; 173, F.

\$55.00: 204, 304, 404, W; 211, 217, M; 226, 326, 426, E; 331, 332, 347, 348, McK.

\$57.00: 202, 203, 302, 303, 402, 403, W; 225, 228, 325, 328, 425, 428, E.

\$60.00: 201, 301, 401, W; 227, 327, 427, E; 157, 158, C; 273, 274, F; 38, 39, 40, 41, 43, 44, 45, 46, T.

\$62.00: 257, 258, C.

\$65.00: 154, C.

\$70.00: 159, 160, 259, 260, C; 172, 271, 272, F.

\$77.00: 212, 218, 312, 318, 412, 418, M.

\$80.00: 161, 162, C; 170, 171, F; 16, 42, T.

\$82.50: 133, 134, 137, 138, 141, 142, 145, 146, McK.

\$85.00: 251-253, 252-254, C.

\$88.00: 411, 417, M; (suites of two rooms).

\$95.00: 242 and 244, McK; 241 and 243, McK; 235 and 237, McK; 236 and 238, McK; (suites of two rooms).

\$100.00: 261-263, 262-264, C.

\$140.00: 233, 245, McK; (suites of three rooms).

Rooms 111, 117, 118, 212, 218, 312, 318, 411, 412, 417, 418, M, include a large study and a good-sized bedroom. Odd numbers are on the south side of the building in Pennsylvania Hall and on the west side of the building in McKnight Hall.

The cost of electric light, fourteen cents per week for each 40-watt Tungsten lamp or its equivalent, is charged on the regular College bills. Any damage done to a room will be charged up against the occupants. Only the Superintendent of Buildings and Grounds is allowed to change the locks on doors. The rooms must at all times be accessible to the College authorities. The occupants of a room will be held personally responsible for the order maintained in that room. Students disregarding

Faculty or Student Council Dormitory Regulations will forfeit their rights as occupants. Janitresses are employed by the College to clean thoroly and set to rights every student room in the dormitories periodically; this service is without cost to the students. The Registrar will be glad to furnish any additional information that may be desired about dormitory rooms as well as rooms in the homes of families living in the town.

STUDENT PROPERTY.

The College disclaims all responsibility for the care or safety of any property belonging to students. With the exception of furniture, mattresses, tacked-down carpets and window shades, any student property left in a dormitory room during the summer vacation must be securely packed in barrels or boxes distinctly marked with the owner's name and the number of his room. No property should be left in closets or bureau drawers. This is to insure against possible loss and to facilitate the cleaning of the rooms.

MATERIAL EQUIPMENT

LIBRARIES.

The College Library contains 23,900 volumes, besides numerous unbound pamphlets. It is a regular depository of the United States Government and the Government of the State of Pennsylvania. Several hundred volumes of public documents are annually received from these sources.

The Library is available to all students under established regulations. During term time it is open for consultation and the drawing of books eight hours each week day, except on Saturday, when it is open for four hours. The librarian and his assistants are always ready to aid the students. The opportunities for the use of the Library are continually being increased by means of a systematic organization and the building up of a complete and attractive library of reference.

The income of a fund invested for the purpose partly provides for needed additions. Five per cent of the money received from tuition is also available for library purposes.

In the same hall with the College Library are the Libraries of the two Literary Societies. They comprise a large number of well-selected and standard volumes, which are annually increased thru the income of separate funds. The Philomathean Library contains at present over 7,200 volumes; the Phrenakosmian Library over 7,850 volumes. These libraries are accessible to the members of the societies under their respective regulations, and are open for the issue of books on Wednesday at 4 P. M., and Saturday at 10 A. M., during term time.

READING ROOM.

The Reading Room is well supplied with daily and weekly papers and leading literary and scientific periodicals, thus enabling the student to become acquainted with current events and contemporary, scientific, literary, and other cultural movements. An annual fee of \$1.50 is charged to each student toward its maintenance.

LABORATORIES.

The Biological Laboratories on the second floor of Glatfelter Hall consist of two large, well-lighted, communicating rooms. They are supplied with twenty-five fine microscopes, and all the other appliances necessary in carrying on the work of the course outlined in the Department of Biology.

The Chemical Laboratories in the Chemical Laboratory Building, as described on page 128, are amply equipped with all the conveniences and apparatus and supplies that are desirable in the requirements for general and analytical chemistry, including work in organic preparations, proximate analysis, examination of water, and other special subjects.

The Physical Laboratory. The lecture room is provided with a large table with sink, water, gas, and electrical connections; apparatus supports, blackboard, charts, and black curtains and a hand-painted screen for stereopticon work. The laboratories, comprising six rooms for general work, besides photographic dark rooms, store room, and storage battery room, and the lecture apparatus room are equipped with modern and carefully selected apparatus for both elementary and advanced work. Alternating and direct electric current is supplied at different points by means of a central switch board, a motor generator, and a storage battery. The apparatus includes a Geryk double cylinder oil immersion air pump, high grade balances, spectrometers, photometer, and stereopticon; and in electricity, D'Arsonval galvanometers,

Wheatstone bridges, potentiometer, voltameters, standards of resistance, capacity, electro-motive force, and self-induction, ammeters and voltmeters for direct and alternating currents (all of the best German or American make); a complete dynamo and motor set illustrating different styles of direct and alternating current machines (induction, synchronous, three-phase, etc.); an induction coil giving an 8-inch spark, high frequency coils, electric wave apparatus, and telegraph, telephone, and wireless telegraph outfits, and Kathode ray and X-ray tubes.

ENGINEERING EQUIPMENT.

The equipment in the Engineering Departments is modern and adequate and is being augmented as necessity demands.

Instruction in mechanical drawing is given in a large, well-lighted room in Glatfelter Hall. The department is well equipped for the purpose and is supplied with drawings illustrating the best recent practice.

The surveying equipment is adequate for the purposes of practice in all kinds of surveying. It includes, besides a number of transits and levels, a plane table, traverse board, sextant, planimeter, level and stadia rods, tapes, etc.

The facilities for materials testing include a 100,000 pound Riehle universal testing machine, with the necessary measuring instruments for the determination of the physical properties of steel, cast iron, wrought iron, timber, concrete, etc. There is also a cement laboratory, with a Riehle tensile briquette machine of 1,000 pounds capacity, and a variety of other apparatus for making all the standard physical tests of cement, sand, and mortar.

The pattern shop, located in a commodious room in the basement of Glatfelter Hall, is supplied with speed lathes and an oilstone grinder, also numerous benches and hand tools, all of the most modern type. In addition there has been provided foundry equipment of an elementary na-

ture for illustrating the fundamental principles of moulding. The College has installed a medium-sized engine lathe, a drill press, emery wheels, and numerous vises and bench tools. A portable forge with the usual collection of small tools has been added.

Thru the courtesy of manufacturers in the vicinity of Gettysburg, arrangements have been made whereby students may spend a short time as apprentices in well-equipped machine shops. By such co-operation it is hoped that the students' knowledge of manufacturing processes will be increased to a greater extent than would be possible in a course of shopwork conducted entirely in a college laboratory.

The foundation of an electrical engineering laboratory has been laid. There are facilities for work in both direct and alternating current phenomena. The apparatus includes several direct current motors and generators, a rotary converter, a synchronous motor, several polyphase and single phase induction motors, a number of transformers, and an assortment of direct and alternating current measuring instruments.

In connection with the College heating and pumping plant there is available for commercial testing such equipment as boilers, a gas engine, and two pumps. As necessity demands further apparatus will be added.

MUSEUM.

The Museum contains varied collections of fauna and flora and minerals, all of which are freely used in instruction. The Mineralogical Cabinet contains over 6,000 specimens, including not only very full suites of the more common and more important minerals, but also good specimens of many of the rarer minerals. The collection in Lithology numbering 3,000 specimens, and of iron in Metallurgy, have, by recent additions, become fairly representative in the most important departments of these sciences. The Botanical collection of 6,000 specimens,

mainly presented by Miss Elizabeth C. Morris, of Germantown, Pa., is well arranged and contains a full representation of American Flora. A beginning has been made of a Chemical Museum—to contain specimens of raw and manufactured materials in chemical industries. Friends of our institution can greatly aid us by making additions to these collections.

BUILDINGS.

Pennsylvania Hall, erected in 1836-38, was remodeled and improved in 1889. It contains eighty-six rooms for students, many of them *en suite*, so that those who may wish to do so can have separate study and sleeping rooms. In this building are also the reading rooms of the Literary Societies and the auditorium used by the College Y. M. C. A. These rooms are all heated by steam and lighted by electricity. Sinks with running water are located on every floor, and on the first and third floors are complete lavatories with hot and cold water connected with the College system of water-works.

McKnight Hall, erected in 1897, is a dormitory building of three stories accommodating about fifty students. It is named in honor of Harvey W. McKnight, D.D., LL.D., Class of 1865, Fourth President of the College. It is finished entirely in hard wood, is heated by steam, lighted by electricity, has hot and cold water on each floor, and lavatories in convenient places. The first floor has eight rooms, each with open fire place, tile hearth, and spacious closets. These rooms may be used by one or two occupants, as preferred. On the second floor all rooms are *en suite*, each suite consisting of a study with one bedroom or two. These are also provided with hearths, closets, etc. The third floor is divided into sixteen single rooms.

Cottage Hall was built in 1856 as a double house for professors. In 1914, because of the great need for more dormitory accommodations due to the increase in the

number of students, it was transformed into a College dormitory of thirty rooms. As it is very advantageously situated on the campus near the main gateway, and is fitted up with all modern conveniences, rooms in this building are among the most desirable to be had.

Glatfelter Hall, erected in 1888-89, is used for general college purposes. It is named in honor of the late P. H. Glatfelter of Spring Grove, Pa., a trustee, who with his family has contributed largely to the College. On the first floor are the library and reference rooms, the President's and Registrar's offices, and recitation rooms. The second floor contains five recitation rooms, the biological laboratories, a drafting room, and a large Social Hall. A large museum and three recitation rooms are on the third floor. In the north wing of the third floor is the hall of the Philomathean Literary Society; in the south wing the hall of the Phrenakosmian Literary Society. In the basement are the laboratories of the Department of Physics with the recitation rooms directly above. The newly-equipped Engineering Laboratory and Shops occupy the entire north wing of the basement.

Thaddeus Stevens Hall, erected 1867-68, is a three-story brick building fronting on Carlisle street. The departments of Military Science and Tactics and Finance and Commerce are located in this building. It is heated by steam and lighted by electricity, and supplied with pure artesian water, hot and cold. On the first floor are class rooms, offices, and a toilet room. The second and third floors are used exclusively as a dormitory for students. On the second floor the rooms are separate, and a modern toilet and shower bath room has been provided. On the third floor they are arranged *en suite* with a broad archway separating the study and sleeping apartments. The rooms are furnished with book-cases, wardrobes, washstands, tables, chairs, and iron enameled beds complete with springs and mattresses.

The Athletic Field House is situated on the north-east corner of Nixon Athletic Field. This is a dormitory de-

signed especially for the use of the members of the College athletic teams and contains all the needed accommodations in the way of showers, hot and cold water, and so forth. The rooms are furnished with iron enameled beds complete with springs and mattresses, book-cases, wardrobes, tables, and chairs. The building is heated by steam and lighted by electricity.

The Brua Memorial Chapel, erected in 1889-90, is the gift of the late Col. John P. Brua, U. S. A., as a memorial to his parents. This building is used for daily prayers, for Commencement exercises, lectures and other occasions requiring a large audience room.

The Chemical Laboratory is a frame building, erected in 1872 and in 1890 converted to its present use. It contains on one floor a large lecture room, an office, store-rooms, chemical-room, balance-room, and three laboratories—providing for two hundred and sixty persons working individually. The building is fitted with the most approved appliances; gas and water at each desk; there are ample hoods, a water-distilling apparatus and large sand bath, and other necessary apparatus. The balance-room contains balances set on pillars especially built for the purpose. In the basement and in the attic are store-rooms. On account of the recent large increase in the number of students an addition to the Chemical Laboratory was built in 1916.

The Astronomical Observatory, erected in 1875, is furnished with an achromatic telescope having an object glass of six and one-half inches, with a transit instrument, chronometer, and other astronomical appliances.

The Gymnasium has on the first floor ample dressing rooms and bathing facilities, and a baseball cage. On the second, or main floor, a class of sixty members can be accommodated for gymnastic drill. This floor is partly enclosed for basketball purposes. The selection of specialized apparatus in light and heavy gymnastics is varied and complete. The office, where all physical tests and measurements are taken, is also on this floor,

and is furnished with a full set of anthropometric apparatus. The gallery has a good seating capacity for spectators.

The Gymnasium is open every week day from 10 A. M. to 10 P. M., and the time is apportioned between regular class practice, general practice, and games.

The Boiler House supplies the steam required for heating all the College buildings.

Besides these buildings there are on the campus the President's house, four halls erected by Greek Letter Societies, and a house for janitors.

A professor's house, donated by Professor George D. Stahley, M.D., class of 1871, has been erected on College ground, corner of Carlisle and Stevens Streets.

Nixon Athletic Field. Immediately north of the College buildings is the athletic field, which is carefully graded and securely inclosed and covers an area of over seven acres. It affords room and facilities for all kinds of out-door sports. Recently the Blough running track has been built. To the west of the field more than a dozen tennis courts have been laid out by the students.

CLASS MEMORIALS.

As testimonials of their love for their Alma Mater and substantial tokens of gratitude for what she has done for them, the classes indicated below have donated memorials to her as follows:

Class of 1883. On the thirtieth anniversary of their graduation the members of this class donated \$500 to the College, the income from which is awarded annually, under the name of the Elinore Taylor Brewer Greek Prize, to that Sophomore who does the best work in the regular Greek class.

Class of 1893. On the twentieth anniversary of their graduation the members of this class presented the fine memorial gateway at the main entrance of the College campus. The approximate cost of this imposing and artistic structure was \$1500.

Class of 1899. On the fifteenth anniversary of their graduation the members of this class presented the furnishings of the class-room for the Department of Philosophy and Education and a departmental library for that department. This equipment, costing nearly \$600, was presented as a Class Memorial to their class-mate, the Rev. Jacob Hiram Straw, who died on the African mission field.

Class of 1902. This class presented the College a concrete walk extending from the entrance into South College Hall to the driveway in front.

Class of 1906. This class gave a concrete walk that runs across the entire front of Pennsylvania Hall connecting the various entrances.

Class of 1907. This class paid for the wiring of all the halls and rooms of Pennsylvania Hall for electric light.

Class of 1912. This class erected the handsome light post in the center of the campus, with its cluster of five large electric light globes, and put down a concrete walk extending from this central point to Pennsylvania Hall, much of the actual labor being done by the members of the class.

Class of 1913. The gift of this class was a concrete walk which extends from Pennsylvania Hall to Glatfelter Hall, connecting with the Gymnasium, and widening into a plaza in front of the entrance to Glatfelter Hall, with two handsome electric lamp posts on the two outer corners of the plaza. This class also put down part of the concrete walk in front of Thaddeus Stevens Hall.

Class of 1914. This class gave a concrete walk which reaches from the main gateway to the center campus light, together with three walks extending to Brua Chapel.

Classes of 1916 and 1917. These two classes presented a concrete walk reaching from Thaddeus Stevens Hall to the corner of Carlisle and Stevens streets. All labor of putting down this walk was done by the members of these classes.

STUDENTS' INTERESTS

LITERARY SOCIETIES.

Two literary societies are connected with the College, the Philomathean and the Phrenakosmian. These exert a remarkably favorable influence on the intellectual and social culture of their members. The exercises consist of essays, orations, debates, and music. The acquaintance with parliamentary law and the practice in clear thought and effective speech which are here gained, make these societies excellent schools in good citizenship. Each society has a spacious hall on the third story of Glatfelter Hall, conveniently and handsomely furnished. Their sessions are held every Friday evening. Every student should become an active member in one of these societies.

DEBATES AND ORATORICAL CONTESTS.

During the year there are debates between teams representing the different classes, also between teams of the literary societies. The College is also represented in the Intercollegiate Oratorical Union, being associated with Franklin and Marshall, Ursinus, Muhlenburg, and Swarthmore in an annual oratorical contest.

Y. M. C. A.

The Young Men's Christian Association of the College, the second one organized in the world, is an active agent in promoting religious interests among the students. Each Sunday morning and Thursday evening a public meeting is held, addressed by invited guests or students. Various Bible and Mission Study classes are organized in college classes, fraternities, and other special groups. A salaried Y. M. C. A. Student Secretary has general direction and co-operates with the officers and committees

of the association. The Woman's Leagues of Pennsylvania College have begun a campaign for the securing of \$30,000 towards the erection of a College Y. M. C. A. Hall to serve as a religious and social center for the student body.

LECTURES.

A series of free public lectures is delivered each year by members of the Faculty and others prominent in some field of general interest.

The Y. M. C. A. conducts at very reasonable cost a series of interesting lectures and musical entertainments. Occasional lectures or addresses by prominent men are delivered before the student body.

MUSICAL ORGANIZATIONS.

Active and well trained choral and instrumental musical organizations consisting of a band, an orchestra, a guitar and mandolin club, and a glee club, add to the pleasure of their members and of the audience at their public exhibitions. These clubs usually take a ten days' trip during the winter.

ATHLETICS.

The various college athletic sports, football, baseball, basketball, field sports and tennis, are well organized. They are recognized as an important part of college life and receive encouragement, but under such regulations as it is believed will prevent them from becoming a possible source of demoralization to the student body and from interfering with the primary work of the institution. The plan under which these sports are conducted gives the opportunity and encourages every student to take part regularly in some out-door exercise.

Students are permitted to participate in any or all branches of athletics unless parents or guardians have notified the Faculty to the contrary.

PRESS CLUB.

The chief aim of the Press Club is to bring the various

interests of the College before the public through the daily papers.

PUBLICATIONS.

THE PENNSYLVANIA COLLEGE BULLETIN is published by the Faculty four times during the year.

"The Gettysburgian," under the control of the student body, is published weekly, and makes a specialty of College and alumni news. A room in McKnight Hall has been provided as an office for the editorial staff of the GETTYSBURGIAN.

"The Y. M. C. A. Hand-Book," issued at the opening of each college year, gives valuable information and suggestions to incoming students.

"The Spectrum," an annual publication by the Junior Class, contains pictorial representations of the College with its various organizations and surroundings, and useful information about students and alumni.

All the periodicals aim at enlarging the means of communication between the College and its graduates, former students, and friends. These enterprises are cordially commended to the patronage of those interested in the welfare of the institution.

ADDRESSES OF ALUMNI.


The College is anxious to keep in touch with its alumni and ex-students not graduates, and requests that all changes in address be sent to the Registrar.

TEACHERS.

The attention of school boards, and others desiring teachers is called to the fact that it is frequently in the power of the Faculty to recommend suitable candidates. Many graduates successfully fill important positions in public and private institutions. The College course for teachers is arranged to meet the requirements of the School Code of Pennsylvania, thus securing the State Life Certificate for the graduates of the College. See page 73.

FORM OF BEQUEST.

I give, bequeath, and devise to "The Trustees of Pennsylvania College, of Gettysburg, in the County of Adams," in the State of Pennsylvania, and their successors and assigns forever, the sum of ——— (or shares in the bank of ———, or any other personal property or real estate, as the case may be), to be applied to the Endowment Fund of the Institution.

 A bequest to a benevolent corporation, to be legal, must be made, in Pennsylvania at least thirty days, and in New York at least sixty days, before the death of the Testator; and should be signed by two witnesses not officially related to the College.

ALUMNI ASSOCIATIONS.

The Alumni Association of Pennsylvania College holds its regular annual meeting Wednesday afternoon of Commencement Week. In 1876 the Board of Trustees granted the Association the privilege of nominating six of their number to membership in the Board, and of maintaining this number as vacancies occur.

The officers of the association are:

President:

CHARLES S. DUNCAN, ESQ., '82.....Gettysburg, Pa.

Vice Presidents:

CHARLES J. FITE, '98Pittsburgh, Pa.

PROF. CHARLES H. HUBER, '92.....Gettysburg, Pa.

HIRAM H. KELLER, ESQ., '01... ..Doylestown, Pa.

Secretary:

CLYDE B. STOVER, '94.....Gettysburg, Pa.

Treasurer:

H. C. PICKING, '79.....Gettysburg, Pa.

The various district alumni associations are active and potential factors in promoting the interests of the College and bringing the College to the notice of prospective students.

GETTYSBURG ACADEMY

This is a boarding school offering a four year course for students preparing for college and also a general or academic course for students who do not expect to enter college. As a training school for boys Gettysburg Academy seeks to cultivate habits of neatness and punctuality as well as industry and accuracy in study. It attaches the greatest importance to the culture of the heart and to the development of those manly virtues that make the truly Christian gentleman. The location, equipment, environment and ideals of the school are favorable for such training.

HOME LIFE.

It is the purpose of those in charge to give every student a happy, healthful home life. The Masters live in the school with the boys and are intimately associated with them both in their work and in their play. The large Living Room with its cheerful fire-place and comfortable furnishings is the gathering place of the boys when not on duty. Here is cultivated the "family spirit" of the school.

THE CAMPUS.

The Academy buildings are in the midst of ample and beautiful grounds adjoining the College campus. This proximity affords the students the influence of the scholastic atmosphere due to numerous literary exercises, debates, lectures and concerts such as only a college community affords. Near association with a college is a stimulus to study and often awakens the desire for a higher education. The Academy shares in the benefits from the College endowment and supervision, in the use

of its fine libraries of nearly forty thousand volumes and in the use of and the instruction given in a well equipped gymnasium. In this sense it is a part of Pennsylvania College of Gettysburg. It is separate and distinct from the College in that it has its own faculty, buildings and grounds and the student body has its own distinctive school life and interests.

THE MAIN BUILDING.

A fine new structure known as The Main Building is now completed and occupied. This building is of beautiful, Colonial architecture and fronts one hundred and fifty-six feet on Carlisle Street. Into its construction and equipment have gone the very best and latest that science, sanitation and school experience can give. The building is heated by a vacuum steam system from the central plant and lighted thruout by electricity. The plumbing is of the most approved sanitary design.

The first floor contains large, airy class-rooms, lavatory with hot and cold water supply, shower baths and a locker-room. There are also a number of rooms for students.

The second or main floor contains the large Living Room beautifully finished in Colonial style with an ample fireplace, tiled floor and comfortable furnishings. This provides a useful and delightful center for the school life. To the south of this is the large Chapel and Study Hall. Here are held the religious exercises, the literary society meetings and certain study periods. To the north is the Dining Hall with a capacity of one hundred boarders. Here the Masters and students take their meals together. On this floor is also the modern sanitary Kitchen equipped with the best devices and machinery for the preparation of food. The table is abundantly furnished with wholesome, well-cooked food fresh from the rich farming and fruit country of the vicinity. Only pasteurized milk and cream is served; only pure filtered water and manu-

factured ice is used. The excellence and cheapness of food supplies in Adams County makes it possible to furnish a very good table at very low rates. Near the Living Room are the office of the Headmaster, a study-hall for girls who attend as day students, and a cozy reading room. The reading room is supplied with a large number of magazines and papers and is open every day for the use of the students.

The entire third floor contains rooms for the students and Masters. There are single and double rooms. On this floor there is another lavatory with hot and cold showers, drinking-font, and all modern toilet conveniences.

THADDEUS STEVENS HALL.

This building is named in honor of "The Great Commoner," who was one of the early friends of the College and a member of its Board of Trustees. It is also heated by steam and lighted by electricity. It is used exclusively for class-room and dormitory purposes.

OUT-DOOR EXERCISE.

The large grounds afford ample opportunity for baseball, football, basketball, tennis, etc. Every student is encouraged to take regular daily exercise in the open. In addition he is entitled to all the privileges of the College Gymnasium.

ADMISSION.

Students are admitted at any time of the school year to the grade to which they are qualified by previous study. It is highly important that the student should enter the school as early in the course as possible. With the present high requirements for admission to colleges a hurried preparation is generally unwise and tends to retard the student's future progress. Accurate scholarship, at which the school aims, can hardly be secured without long

and thoro drill, especially in the Languages and Mathematics. An additional year of preparation is often a large gain in the end because of the greater ease and thoroness with which future work is done. The fact, however, is recognized that students differ widely in ability and industry, and every opportunity is afforded those, who can do so, to cover the required work in the shortest possible time.

Students who have advanced sufficiently in certain subjects to enter the Freshman class of the College but who are deficient in the Languages or Mathematics will have the opportunity without extra charge of making up their deficiencies with the Academy classes.

Girls are admitted as day students. A comfortable rest and study hall has been reserved for their exclusive use and they are not obliged to mingle with the other students except at the regular recitation periods. When at the Academy they are under the care of the Preceptress. Refined homes can be secured for them in town at moderate rates. The Headmaster is kept informed as to their conduct.

ADMISSION TO COLLEGES.

Gettysburg Academy is an accredited secondary school. All colleges admitting students by certificate accept its scholarship credits for entrance. This means that a student satisfactorily finishing a course at The Gettysburg Academy will be admitted without examination to Pennsylvania College at Gettysburg or to any other first grade institution admitting by certificate.

COURSES OF STUDY.

There are two courses, the Classical (with Greek), and the Scientific or Academic (with German); for detailed description of these courses see the special Academy catalog.

STUDENT OUTFIT.

All the boys except day students from the local community are required to room and board in the school.

Each student will need the following outfit: Bible, four sheets, three pillow-cases, pillow, blankets, spread, towels, bath-robe, napkins, napkin-ring, fountain pen, and laundry bag (marked G. A.) All articles to be sent to the laundry should be plainly marked with the student's name.

The rooms are furnished with single beds, springs, felt mattresses, study table, chairs, book-case, chiffonier and window shades. A large closet is provided for each occupant. The only furnishings to be supplied by the student are a rug (9 x 12) for the floor and an electric desk lamp with cord.

SCHOLARSHIPS AND AID FOR STUDENTS.

A limited number of service scholarships worth \$30 each are awarded annually to deserving students by the Finance Committee of the Board of Trustees. Applications for these scholarships must be made in writing and should state in full the reasons for the request. Such applications must be handed to the Headmaster before October 1 of the school year. The children of clergymen are allowed a reduction of one-half of the tuition, that is, \$37.50 each school year.

The Parent Education Society of the General Synod controls ten scholarships worth \$30 each annually which are open to young men preparing for the ministry in the Lutheran Church. Application for the use of these scholarships should be made to President John A. Singmaster, D.D., Gettysburg Theological Seminary, Gettysburg, Pa.

Rev. Sidney E. Bateman, M.D., ScD., Class of '87, of Philadelphia, Pa., has established an endowment fund of \$500, the income from which is awarded annually as a scholarship to some worthy and needy student preparing for the ministry in the Lutheran Church. Application for the use of this scholarship should be made to the Headmaster of the Academy.

A number of students can earn part of their school charges by caring for the halls and class-rooms, waiting on the tables in the Dining Hall and rendering other services about the institution. Applicants for such employment should make written request to the Headmaster before the opening of school in September. There are also opportunities for students to earn money in the town of Gettysburg. Mr. S. F. Snyder, Assistant to the President of the College, will assist those who desire such employment. Students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College.

EXPENSES.

The rate for boarding students for the full school year is \$280 or \$300 or \$320 according to the size and location of the room selected. The school year is divided into two equal semesters. Bills will be rendered at the beginning of each semester as follows:

	Lowest	Medium	Highest
	Rate	Rate	Rate
First Semester	\$140	\$150	\$160
Second Semester	140	150	160
	<hr/>	<hr/>	<hr/>
Total	\$280	\$300	\$320

The amount of each semester bill is payable in advance at the beginning of the semester. As a matter of accommodation, however, payment for one-half of a semester bill will be accepted at the beginning of the semester, in which case the balance must be paid not later than the middle of that semester.

These charges cover tuition, board, furnished room, heat, electric light, pew rent, use of athletic field and tennis courts, gymnasium, library, reading room and athletic fees. The money received from the athletic fees (calculated at \$6 for each student) is administered by a committee composed of faculty and student members for the

benefit of the athletic interests of the school. There are no *extra fees*. It will therefore be seen that the cost of a course in Gettysburg Academy is much less than in the great majority of secondary boarding schools offering the same first-class advantages of instruction and equipment.

Each student upon reserving a room is required to deposit \$5 which will be credited on his first semester bill. He must also deposit \$1 to insure return of keys and care of the school property. Students responsible for damage to the school or student property are expected to report the same to the Headmaster who will make an equitable adjustment. Damage not so reported will be charged to the occupants of a room or in certain cases to the whole student body as circumstances may justify.

The tuition for day students is \$75 per school year including the athletic fee. The terms for payment are the same as for the boarding pupils.

ADDENDA.

Students should arrive during the afternoon or evening of the day preceding the opening of the school.

Trunk checks should be handed to the Janitor as other persons are not allowed to move trunks to and from the rooms.

Students entertaining guests must report the fact to the Senior Master. Visitors will be charged at the rate of thirty cents per meal.

A reduction of \$1 per week is made to "five day" boarding pupils.

Day students taking dinners in the Dining Hall of the school will be charged \$1.50 per week.

The use of tobacco in the buildings is prohibited.

The Academy catalog containing cuts of the buildings and detailed information will be mailed upon request to

THE HEADMASTER OF GETTYSBURG ACADEMY,
Gettysburg, Pa.

STUDENTS IN COLLEGE 1916—1917

GRADUATE STUDENTS. (NON-RESIDENT).

Albert, Robert Bruce	Scranton
Amspacher, Victor Earl	Altoona
Beard, Clinton William	Niagara Falls, N. Y.
Diehl, Earle Kerper	Pottsville
Keefauver, Lloyd Conover	Cape May Court House, N. J.
Rosenberry, B. F. Loder	Easton
Wert, Anne U.	Harrisburg

GRADUATE STUDENTS. (RESIDENT).

Allen, Chester	Gettysburg
Cessna, Charles Paul	Rainsville
Creager, Paul Snyder	Gettysburg
Hashinger, William Roy	Coatesville
Ikeler, Donald Fisher	Bloomsburg
Kulp, Benjamin Frank	Phoenixville
Neu, Paul William	West Hoboken, N. J.
Nicholas, John Spangler	Washington, D. C.
Rechard, Ottis Howard, Jr.	York
Snyder, Lewis Neiffer	Harrisburg
Spangler, John Elmer	Gettysburg

SENIOR CLASS

Candidates For the Degree of Bachelor of Arts.

P. indicates Pennsylvania Hall; M, McKnight Hall; C, Cottage Hall; S. H, Stevens Hall; F, Field House

	Group.	
Ashton, Morville	1 Trucksville	31 W. Water St.
Bausch, Frieda Bertha	2 Gettysburg	228 Carlisle St.
Bennett, Victor Wilson	2 Frostburg, Md.	360-362 C.
Bentz, Marie Elizabeth	2 Gettysburg	26 Stevens St.
Bink, Howard Frank	1 Paxtang	321 P.
Bookhultz, George Elmer	1 Washington, D. C.	401 P.
Braunlein, John Howard	1 Baltimore, Md.	255-257 C.
Brenneman, Willis Raymond	1 Spring Grove	312 P.
Carlson, Raymond Albert	1 Renovo	325 P.
Diller, Charles Slagle	2 New Oxford	27 S. Franklin St.
Duncan, Charles William	2 Gettysburg	109 Lincoln Ave.
Embich, John Reigle	2 Shippensburg	412 P.
Fink, James Russell	1 York	312 P.
Fisher, Henry Earl	1 Clearfield	101-103 P.
Frommhagen, Frederick Carl	1 Oneonta, N. Y.	358 C.
Hallenbeck, Chester Traver	2 Guilderland Center, N. Y.	124 P.
Hankey, Ralph Vernon	2 Apollo	146 M.

Group.

Hershey, Clarence Henry	1	Dover	312 P.
Hesson, Raymond Luther	1	Taneytown, Md.	424 P.
Kunkel, Norman Wilbur	1	Dover	211 P.
Lakin, Edmund Aldine	2	Hagerstown, Md.	W. Water St.
Lentz, John Max	3	Gettysburg	32 N. Stratton St.
Loudenslager, Paul Edward	1	Harrisburg	117 Springs Ave.
Maxwell, David Elias	1	Jeanette	401 P.
Peters, William Howard	1	Dallastown	220 P.
Ringler, Alexander Preston	2	Berlin	24 S. H.
Rost, Lawrence Eugene	2	Red Lion	337 M.
Schillinger, George William	1	Harrisburg	260 C.
Sheads, Marjorie Louise ✓	2	Gettysburg	115 N. Stratton St.
Sincell, Charles Morris	2	Oakland, Md.	305-307 P.
Slifer, Luther Walter	1	St. Thomas	407 P.
Sowers, Lauran Delk	2	Hagerstown, Md.	W. Water St.
Spangler, John Allen, Jr.	2	Spring Grove	422 P.
Taughinbaugh, Minerva Irene	2	Gettysburg	128 York St.
Venable, Charles Leslie	1	Chambersburg	323 P.
Watson, Edith Esther ✓	2	Frostburg, Md.	128 York St.
Williams, Ira Alvin	1	New Freedom	412 P.

Candidates For the Degree of Bachelor of Science.

Bennett, John Crist	4	York	319 P.
Boyson, William Andrew	5	Harrisburg	245 M.
Bringman, Jay William	5	Gettysburg	62 Stevens St.
Brumbaugh, Luther Truman	4	Roaring Spring	327 P.
Campbell, William Clifford	4	Butler	F.
Cannen, James Vernon	7	Baltimore, Md.	212 P.
Daugherty, Davis Clifton	6	Butler	341 M.
Flenner, Robert Wareham	4	Tyrone	417 P.
Geiser, John Dixon	4	Pen Mar	417 P.
Hatch, James Albert	4	Kittanning	F.
Hixson, George Paul	4	Ruffsedale	138 M.
Huff, Myron Reed	4	Gettysburg	27 S. Franklin St.
Lamont, Bruce Floyd	6	Hazleton	337 M.
Mead, Leon Roy	10	Newberry	325 P.
Newcomer, Samuel Herbert	4	Smithsburg, Md.	120 Carlisle St.
Ruth, Harry Foss	4	Scottsdale	138 M.
Shearer, Roger Loucks	6	York Haven	219 P.
Starr, Henry Etter	4	Millersburg	129 N. Washington St.
Stermer, Paul Ernst	7	York	201 P.
Stratten, Harry Theophilis	4	Chambersburg	F.
Williams, Frank Billmeyer	5	Bloomsburg	245 M.
Zane, Ida Dorothy ✓	4	Gettysburg	227 Carlisle St.
Zeilinger, Albert Henderson	4	Williamsburg	410 P.

Seniors, 60.

JUNIOR CLASS

Candidates For the Degree of Bachelor of Arts.

Group.

Bare, Ethel Grace ✓	1	York	26 Stevens St.
Becker, Horace Gilbert	1	Hanover	157 C.
Bortz, Roland George	1	Apollo	203 P.

Group.

Cadman, Eugene Etwell	2	Millville	134 M.
Creager, Harold Luther	1	Gettysburg	248 Baltimore St.
Deardorff, Eva Clare ✓	2	Gettysburg	401 Baltimore St.
Deibert, Allyn Thomas	2	Washington, D. C.	153 C.
Drawbaugh, Jacob Wilbur	1	Harrisburg	332 M.
Farmer, Clayton Stultz	3	Marietta	259 C.
Fisher, Nelson Franklin	1	Milton	427 P.
Floto, Max Crawford	2	Connellsville	133 M.
Gauger, William Clarence	3	McEwensville	205 P.
Gotwald, Luther Alexander	1	York	262-264 C.
Hamme, John Alfred	2	York	261-263 C.
Knubel, Frederick Ritscher	1	New York, N. Y.	160-162 C.
Laird, Robert Malcolm	1	Huntingdon	256 C.
McCollough, John Milton	2	Chicora	161 N. Washington St.
Miller, Luther Paul	2	Harrisburg	203 P.
Musselman, Helen Nunemaker	2	Gettysburg	247 Baltimore St.
Ricker, Charles Cyrus	1	Huntingdon	258 C.
Saul, Harry Luther	1	Trenton, N. J.	421 P.
Secrist, Mark Howard	2	Hanover	217 P.
Shearer, Paul Bomberger	2	Shippensburg	161 N. Washington St.
Snider, Verl Eugene Cluts	1	Taneytown, Md.	107 P.
Stonesifer, Wade Earl	1	Emmitsburg, Md.	302 P.
Wagner, Ralph LaShelle	1	Gordon	122 P.
Weaver, Lorna Jeannette ✓	2	Gettysburg	66 W. High St.

Candidates For the Degree of Bachelor of Science.

Barbehenn, John Berthold	4	Jersey City, N.J.	218 N. Stratton St.
Brown, Harry Alvin	5	Thomasville	303 P.
Buck, Edward Hastings	5	Penbrook	359 C.
Buffington, Chester Miles	9	Harrisburg	154 C.
Croll, John	5	Middletown	225 P.
Duff, Stewart Emmons	6	Altoona	A. T. O. House
Ensminger, Samuel Hyson	5	York	York
Ernest, Jay Blair	6	Mifflintown	158 C.
Finn, Howard Nelson	4	Kingsley	233 M.
Gehauf, Bernard	4	Frostburg, Md.	357 C.
Gingrich, Luther Raymond	9	Waynesboro	359 C.
Glunt, Arthur William	6	Altoona	A. T. O. House
Harper, William Butler	4	Martinsburg W. Va.	212 P.
Lins, Harry William	7	Lewistown	31 W. Water St.
McCreary, Ralph Work	4	Indiana	253 C.
McNabb, Wallace Morgan	4	Belleville	360-362 C.
Matter, Lawson Deacon	8	Harrisburg	154 C.
Mellinger, Wilbur Sittler	6	Leetonia, Ohio	160-162 C.
Mizell, Russell Francis	4	Gettysburg	Harrisburg Road
Montgomery, Charles Sumner	6	Roselle Park, N. J.	233 M.
Orr, James Carlyle	4	Indiana	327 P.
Potter, Alexander Oberlander	6	Kitchener, Ontario, Can.	402 P.
Power, Edmund Emanuel	7	Gettysburg	316 Baltimore St.
Rebuck, Walter Edgar	4	Shippensburg	328 P.
Rouzer, Harvey Webster	4	Gettysburg	Delap Ave.
Sachs, George Amos	4	Gettysburg	140 E. Middle St.
Scheffer, Louis Kossuth	8	Harrisburg	142 M.
Sheffer, Paul Ritchie	4	Fairfield	202 Chambersburg St.

Group.			
Shockey, Ralph Irl	4	Waynesboro	133 M.
Shriver, Ralph Edwin	4	Chambersburg	322 P.
Snyder, Arthur Kenneth	7	Vandergift	133 M.
Snyder, Charles Franklin	5	Millersburg	159-161 C.
Stoney, Michael Joseph	6	Mont Clare	104 P.
Wible, Charles McCreary	5	Gettysburg	Emmitsburg Road
			Juniors, 61.

SOPHOMORE CLASS

Candidates For the Degree of Bachelor of Arts.

Group			
Apple, John Adam	2	Sunbury	141 M.
Baker, Ralph Wolf	1	New Oxford	221 P.
Baker, Robert Clinton	3	Bloomsburg	245 M.
Clouser, Paul Russel	1	Harrisburg	137 M.
Deardorff, Boyd Harold	1	Dillsburg	301 P.
Drawbaugh, Herman Zinn	1	Camden, Ind.	338 M.
Dulebohn, George Roscoe	1	Mason-Dixon	158 C.
Faust, Martin Luther	2	Ambler	204 P.
Gold, Frank Albert	1	Butler	218 P.
Grove, Elwood Martin	1	Red Lion	111 P.
Hagedorn, Ivan Henry Carl	1	Philadelphia	121 P.
Hankey, Ralph Lee	2	York	206 P.
Herman, Clyde Henry	1	York	135 N. Washington St.
Hilner, Howard Kauffman	1	Harrisburg	321 P.
Himes, Donald Eugene	1	Pittsburgh	223 P.
Hoke, Franklin Levi	3	Penbrook	353 C.
Huffer, Ralph Singleton	1	Burkittsville, Md.	222 P.
Keller, Lloyd Monroe	1	Shrewsbury	301 P.
Kopp, Curvin Franklin	2	York	418 P.
Lampe, Russell Franklin	3	Altoona	343 M.
Lehn, John Henry	1	York	106 P.
Lybarger, Donald Fisher	3	Reading	204 P.
Markel, William Daniel	3	Evans City	F.
Miller, Harman Frederick	1	Baltimore, Md.	125 P.
Miller, John Bringman	2	Spring Grove	118 P.
Miller, Robert Sheridan	1	Johnstown	123 P.
Morrison, William Earle	1	York	218 P.
Mummert, Lewis Jacob	1	Hanover	118 P.
Neff, Edgar Ralph	1	York	161 N. Washington St.
Neiman, Leonard Adam	1	Dover	208 P.
Olinger, Lavinia Ruth ✓	2	Gettysburg	34 W. Middle St.
Pfeffer, Mary Ellen ✓	2	Gettysburg	Steinwehr Ave.
Phillips, Guy Allen	1	East Berlin	326 P.
Rank, James Lindley	2	Frostburg, Md.	207 P.
Redcay, William Harold	1	Hanover	420 P.
Rutherford, William Harold	1	Philadelphia	347 M.
Schmidt, Frederick John	2	Philadelphia	363 C.
Schwartz, Wayne Timalium	2	York New Salem	403 P.
Senft, Bertha ✓	2	Littlestown	344 Baltimore St.
Shindler, Raymond Clayton	1	York	412 P.
Sieber, William Thomas	1	McAlisterville	418 P.

	Group.		
Simpson, Lowell Vogel	2	Friedens	120 P.
Smeich, Earl Allison	1	York	27 S. H.
Stamm, Raymond Thomas	1	Milton	427 P.
Stewart, James Raymond	1	Philadelphia	302 P.
Stine, Ralph Edward	1	York	304 P.
Stock, Earl Kresge	3	Wyoming	411 P.
White, Raymond Harrison	1	Harrisburg	408 P.
Wolfe, Paxton Walter	3	Maytown	419 P.
Yund, Roy La Verne	1	New Kensington	1 York St.

Candidates for the Degree of Bachelor of Science.

Anderson, Dudley Hulings	6	Kittanning	226 P.
Barbehenn, Henry Edward	6	Gettysburg	218 N. Stratton St.
Beckmeyer, Grund Frederick	5	York	227 P.
Bishop, Mark Zullinger	6	Baltimore, Md.	146 M.
Bjurberg, Paul Henry	4	Reading	117 P.
Blocher, David	6	Gettysburg	28 W. Middle St.
Book, John Edward	5	Harrisburg	236-238 M.
Bowers, Grayson Hunter	5	Harmony Grove, Md.	241-243 M.
Brenneman, James Alexander	6	Freeport	142 M.
Christ, Bruce Levi	4	Pine Grove	228 P.
Crissman, Lyall Nichols	7	Elkins, W. Va.	318 P.
Diehl, John	6	Greencastle	320 P.
Diller, Edgar Isaiah	5	New Oxford	221 P.
Dippel, Harry Weber	4	Jersey City, N. J.	348 M.
Eberly, Harry Bell	6	Chambersburg	354 C.
Eberly, Seibert Durboraw	5	Chambersburg	157 C.
Emanuel, Daniel Victor	8	Harrisburg	F.
Fleck, George Slayman	6	Altoona	31 W. Water St.
Flenner, Albert Lawrence	4	Tyrone	417 P.
Frey, Vernon Dewey	6	Red Lion	111 P.
Fröhlich, Samuel Sloane	5	Harrisburg	331 M.
Gilliland, Samuel Alexander	4	Gettysburg	239 Carlisle St.
Harbaugh, Wilfred Le Cron	5	Waynesboro	363 C.
Hartley, Mahlon Artman	10	Gettysburg	301 Carlisle St.
Heffelfinger, David Mitchell	4	Harrisburg	201 P.
Hess, Paul Lower	6	Red Lion	111 P.
Jacobs, Norman Gephart	5	Somerset	233 M.
Lecrone, Edgar Henry	4	York	303 P.
McCauslin, Alfred Roy	4	Biglerville	161 N. Washington St.
McCreary, Aaron Monroe	4	Vera, Canada	212 P.
McDonnell, Carroll Richter	7	Gettysburg	140 W. Middle St.
McNitt, Allen Cummins	10	Lewistown	346 M.
Menchey, Albert John	4	Gettysburg	63 W. High St.
Metzger, John Hubert	5	Rebersburg	42 S. H.
Miller, George Reich	4	Harrisburg	333 M.
Montanye, John	5	Pittston	F.
Moyer, Clifford Zendt	6	Souderton	F.
Oyler, Ralph Ziegler	4	Gettysburg	218 York St.
Phillipy, Lester Newton	8	Greencastle	254 C.
Plank, John Earl	7	Gettysburg	131 Chambersburg St.
Poust, George Standish	6	Hughesville	134 M.
Reinecker, Haydn Plank	4	Gettysburg	359 York St.
Richards, James Smiley	4	Altoona	F.

Saltsman, Charles Kunkel	6	Harrisburg	225 P.
Scheffer, William Brooks	4	Harrisburg	142 M.
Shaner, David Donald	7	Birdsboro	404 P.
Shaub, Paul Daniel	5	New Freedom	411 P.
Shutter, Clarence	6	Steelton	240 M.
Stallsmith, Maurice Charles	4	Gettysburg	132 E. Middle St.
Stambaugh, Frederick Michael	10	Hanover	125 P.
Sunderman, Frederick William	4	Juniata	324 P.
Taylor, George Cornwell	9	Gettysburg	19 E. High St.
Wells, Hibbert Preston	10	Chester Springs	135 N. Wash'tn St.
Widder, George McAlister	5	Harrisburg	233 M.
Witherow, Harry Minnick	9	Taneytown, Md.	417 P.
Wohlfarth, John Casper	8	Harrisburg	333 M.
Yarrison, Byron Wordsworth	5	Montgomery	253 C.

Sophomores, 107.

FRESHMAN CLASS

Candidates For the Degree of Bachelor of Arts.

Baker, Caroline Maude	2	Lancaster	109 York St.
Belknap, Carlisle Parks	3	Salamanca, N. Y.	306 P.
Bender, Ardell Hartlep	2	Millvale	26 S. H.
Bingaman, Frank Warren	2	Esterly	25 S. H.
Bousum, Jacob St. Clair	1	York	304 P.
Cooper, Henry Bowman	3	Camp Hill	236-238 M.
Eisenhart, Russell Martin	1	York	202 P.
Fasic, Anna Amanda	2	Juniata	128 York St.
Fleck, Cyrus Stoner	1	Riegelsville	255-257 C.
Hafer, Glenn Teeter	1	Chambersburg	322 P.
Hildebrand, Clinton Frederick	1	York	106 P.
Hollinger, Mary Marguerite	2	Gettysburg	417 W. Middle St.
Holman, Edward Lee	1	Millerstown	227 P.
Hurd, Mason Montraville	1	Williamsport, Md.	344 M.
Klinefelter, Walter	1	Seitzland	406 P.
McCullough, George Thomas	2	Chicora	161 N. Washington St.
Miller, Guy Edward	1	Newville	407 P.
Miller, Percy Edwin	3	Chambersburg	305-307 P.
Mitchell, Herbert Scott	2	Apollo	28 S. H.
Morgart, Margaret Virginia	2	York	209 N. Washington St.
Moyer, Eugene Sieber	1	Walnut	32 S. H.
Neal, Clarence Arthur	1	Waynesboro	353 C.
Peeling, James Hedley	2	Red Lion	306 P.
Putman, Dwight Frederick	1	Somerset	129 N. Washington St.
Rockey, Walter Wellington	1	Bellefonte, N. J.	305-307 P.
Rudisill, Harold Becker	1	Hanover	34 S. H.
Schwartz, Perry Dean	2	York New Salem	403 P.
Senft, Grace Rebecca	2	Littlestown	344 Baltimore St.
Shearer, John Dwight	3	York Haven	219 P.
Siems, Louis Diedrich	2	Brooklyn, N. Y.	212 P.
Slanker, Harry Washington	2	Gordon	127 P.
Sternat, Henry Wich	1	Towson, Md.	405 P.
Stewart, Margaret Armstrong	2	Gettysburg	228 Baltimore St.
Stoner, Mildred Minerva	2	Gettysburg	42 W. High St.
Stricker, Wm. Jennings Bryan	3	Robesonia	308 P.
Tipton, Marguerite Mumma	2	Gettysburg	139 Carlisle St.

Wall, Fred Brice	2	Pittston	F.
Woodward, Luther Ellis	1	Walnut	32 S. H.
Worley, William Carson	1	Lititz	320 P.
Yiengst, Kirby Mahlon	1	Myerstown	25 S. H.
Zeamer, Wisler Gable	3	Columbia	345 M.

Candidates For the Degree of Bachelor of Science.

Adams, Harvey Raymond	6	Gettysburg	Seminary Ridge
Anderson, Emil William	4	South Amboy, N. J.	411 P.
Bantley, David Straub	5	Scalp Level	345 M.
Barclay, Milton Russell	7	Scottdale	404 P.
Beyer, Oscar Arthur	4	Union Hill, N. J.	419 P.
Black, Jonathan	7	Millerstown	F.
Blocher, Charles Huber	4	Gettysburg	Carlisle St.
Boyson, John Evans	6	Harrisburg	245 M.
Briggs, Harold David	10	Johnstown, N. Y.	40 S. H.
Browning, Ralph Avery	6	Myersville. Md.	30 S. H.
Bryant, Benny Basil	6	Hinton, W. Va.	F.
Buedinger, William Anton	4	Jersey City, N. J.	318 P.
Campbell, Ralph Gaghagan	5	Butler	F.
Cash, Truman Buckey	4	Westminster, Md.	428 P.
Chamberlain, Clarence Newton	9	Asbury Park, N. J.	218 P.
Dieffenbach, Ernest Guy	10	Harrisburg	F.
Eberts, Dunbar Allen	6	Harrisburg	143 Springs Ave.
Feiser, Harry Nelson	6	East Berlin	29-31 S. H.
Fellenbaum, Austin Habecker	6	Mount Joy	423 P.
Fisher, Luther Russell	4	Clearfield	101-103 P.
Garvin, Henry Watterson	4	Gettysburg	213 Buford Ave.
Gillette, Eugene Merle	7	Vineland, N. J.	255-257 C.
Griest, Harold Mahlon	6	Philipsburg	224 P.
Hamil, Charles Aden	7	Frostburg, Md.	F.
Houck, Charles Simmons, Jr.	6	Frederick, Md.	241-243 M.
Houtz, Harold Adam	4	Bellevue Park	104 P.
Hudock, John Francis	4	Freeland	F.
Hulsizer, John Edward	5	Woodcliff, N. J.	261-263 C.
Kattenhorn, Christian Charles	4	Newark, N. J.	318 P.
Kohler, John Henry	5	Yoe	39 S. H.
Lee, James Carroll	10	Everett	129 N. Washington St.
Lippy, John David, Jr.	4	Gettysburg	47 Chambersburg St.
Marcus, Lloyd Leon	4	Harrisburg	104 P.
Martin, Walter Eugene	4	Gettysburg	310 N. Stratton St.
Mealy, Willard Joseph Trier	6	Trenton, N. J.	F.
Miller, Kenneth Jamison	7	Bruin	117 P.
Miller, Maurice Harry	4	Gettysburg	80 Steinwehr Ave.
Miller, Morell Waldo	5	Abbottstown	426 P.
Minick, William Leon, Jr.	9	Waynesboro	254 C.
Noon, Russell, Alleyne	5	Listie	235-237 M.
Pfeffer, Fred George	4	Gettysburg	330 Baltimore St.
Plitt, Walter Lewis	6	York	161 N. Washington St.
Reen, Calvin Gilbert	7	Gettysburg	144 Springs Ave.
Rote, Harry Frederick	4	Harrisburg	331 M.
Saul, William John	4	Pine Grove	228 P.
Schrite, J. Ellsworth	6	Mount Joy	423 P.
Sharets, John Lloyd	5	Gettysburg	34 Stevens St.
Sheads, Robert Emory	7	Gettysburg	115 N. Stratton St.
Sheely, Glenn Francis	4	Gettysburg	Harrisburg Road

Sherer, Clayton Millard	10	Manheim	1 York St.
Spangler, Howard Alexander	4	Gettysburg	112 York St.
Spangler, Jacob Monroe	6	East Berlin	29-31 S. H.
Springer, John Herbert	4	Harrisburg	137 M.
Stauffer, Russell Deardorff	9	Gettysburg	133 E. Water St.
Stong, Charles Herman	6	Altoona	418 P.
Taylor, Henry White	6	Gettysburg	19 E. High St.
Taylor, James Carl	5	Yoe	39 S. H.
Trundle, Alfred Graham	5	Frederick, Md.	428 P.
Vogel, Harry Leon	10	York	202 P.
Walker, Charles Willard	5	Somerset	235-237 M.
Williams, Emory Ray	7	Gettysburg	42 Hanover St.
Williams, Henry Jacob	4	New Freedom	422 P.
Winter, Charles Albert, Jr.	7	New York, N. Y.	137 M.
Yohe, David Abraham	4	Gettysburg	1 York St.
Zarr, Robert Rush, Jr.	8	Nanticoke	160-162 C.
Zobel, Carl George F.	4	Washington, D. C.	428 P.

Freshmen, 107.

Partial Course Students.

Armstrong, Foster S.	Carlisle	F.
Baker, George Bush	York	F.
Carlson, Oscar Wilhelm	McKeesport	226 P.
Clemens, Arthur Knisely	Steelton	117 Springs Ave.
Correa, Francisco	San Juan, P. R.	161 N. Wash'tn St.
Craig, Melvin Lewis	Butler	F.
Dodson, Hobart W.	Nanticoke	145 M.
Epley, Clarence William	Gettysburg	357 York St.
Francis, Reginald Kiefer	Waynesboro	141 M.
Free, Walter Mervin	Red Lion	S. H.
Gilham, Lester Sigsbee	Schuylkill Haven	119 P.
Godwin, William Francis	Orrtanna	Orrtanna
Gotwalt, Spurgeon Talmage	Brillhart	319 P.
Haldeman, Ward Franklin	Pine Grove	118 P.
Horner, Luella Oneida ✓	Gettysburg	353 York St.
Howard, Frank Dorsey	Frederick, Md.	242-244 M.
Johnson, Bertman Verdi	Altoona, Fla.	108 P.
Johnson, Leo Lawrence	Waupaca, Wis.	159-161 C.
Macina, Louis De Raymond	New Haven, Conn.	342 M.
McMillan, Margaret M. ✓	Gettysburg	249 W. Middle St.
Morris, Joseph Theodore	Gettysburg	301 N. Stratton St.
Mumma, Richard Good	Steelton	217 P.
Pfeffer, Helen Louise ✓	Gettysburg	330 Baltimore St.
Pohl, William Frederick	Butler	26 S. H.
Reynolds, Walter Daniel	Gettysburg	128 N. Washington St.
Robinson, Felix Griffin	Accident, Md.	117 P.
Rowe, Charles Austin	Roland Park, Md.	F.
Schriver, James Claude	Lashley	328 P.
Snyder, George Emerson	New Oxford	New Oxford
Thompson, Raymond Jack	Butler	28 S. H.
Thrush, Walter Kieffer	Chambersburg	145 M.

Partial Course, 31.

1916 STUDENTS *

Kendlehart, Joseph David	Gettysburg
Rudisill, Ruth Alverta	Harrisburg

* Entered after publication of 1915-1916 Catalog.

STUDENTS IN THE ACADEMY.

SUB-FRESHMAN CLASS

Bigham, Charles Andrew	Gettysburg	R. R. 4.
Brown, Russell Newton	Myersville, Md.	42 S. H.
Cable, Glenn Elsa	Boswell	303 M. B.
Cook, Roderick Walker	Dillsburg	301 M. B.
Cords, Arthur Albert	New Hampton, Iowa	325 M. B.
Deatrick, Ralph Curtis	Gettysburg	307 Baltimore St.
Endres, Joseph Earl	Huntingdon	105 M. B.
Frontz, Maurice Clinton	Huntingdon	309 M. B.
Funk, David, Melancthon	Mineral Point	113 M. B.
Gardner, Glenn Markley	Gettysburg	303 N. Stratton St.
Ginter, Calvin Perry	Altoona	313 M. B.
Greene, Walter Edward	McKeesport	303 M. B.
Hargleroad, Frederick Karper	Shippensburg	310 M. B.
Hesser, Harvey Allen	Pine Grove	323 M. B.
Hill, Walter Henry	Muncy	301 M. B.
Hollinger, Charles Raymond	Gettysburg	154 York St.
Keim, James Franklin	Boswell	325 M. B.
Knouss, Myron Henry	Arendtsville	305 M. B.
Lecrone, Milo Andrew	Davidsville	308 M. B.
Lecrone, Ellis Krout	Davidsville	308 M. B.
Little, John Harold	Hanover	302 M. B.
Long, Max Dewey	Dauphin	304 M. B.
McCreary, Harry Clay	Indiana	311 M. B.
Metzger, Harold Luther	Rebersburg	42 S. H.
Miller, Charles Douglas, Jr.	Pottsville	310 M. B.
Mogel, Charles Luther	Markelsville	111 M. B.
Murtagh, Hugh John	Philadelphia	102 M. B.
Neely, Sarah Cassatt	Gettysburg	71 Lincoln Ave.
Oyler, Herbert Levi	Gettysburg	148 N. Stratton St.
Passell, Leon Brooks	Lockhaven	111 M. B.
Patterson, James Thornton	Cumberland, Md.	311 M. B.
Rice, John Stanley	Arendtsville	305 M. B.
Schwartz, Charles William	Port Carbon	224 E.
Seabrook, Herbert Lyle	Fairfield	103 M. B.
Shaulis, Samuel Sylvester	Somerset	302 M. B.
Wehler, Maurice Leroy	New Oxford	319 M. B.
Yoshikawa, Masanori	Yamada, Hyuga, Japan	101 M. B.
Young, Henry Beck	Hagerstown, Md.	113 M. B.
	Sub-Freshmen, 38.	

UPPER MIDDLE CLASS

Bevan, Reginald Mariavel	Paterson, N. J.	202 M. B.
Buehler, Guyon Edwards	Gettysburg	249 Carlisle St.
Bushman, Louis Anthony	Gettysburg	Baltimore Pike
Deardorff, William Isaac	Occoquan, Va.	109 M. B.
Dimpsey, Frank James	New Freedom	103 M. B.

Eberman, Theodore Elmer	Baltimore, Md.	307 M. B.
Eckert, William Edward	Gettysburg	R. R. 9.
Eichelberger, Edward Gray	Worcester, Mass.	304 M. B.
Fogelsanger, Harold Harry	Chambersburg	312 M. B.
Huber, Elizabeth Annan	Gettysburg	411 Carlisle St.
Lambert, Harold William	Wilmington, Del.	313 M. B.
McMann, Ralph Howard	Sharpsburg	321 M. B.
Plank, Clyde Anthony	Table Rock	R. R. 7
Reller, Louis Smith	Pittsburgh	312 M. B.
Routson, Harvey Thomas, Jr.	Waynesboro	315 M. B.
Rudisill, John Calvin	Littlestown	325 M. B.
Shoenberger, Alden Kresge	Pottsville	202 M. B.
Shumaker, Stella Barton	Harrisburg	163 Carlisle St.
Spangler, Wellington Angelo	Hampstead, Md.	107 M. B.
Wisler, Jay Luther	Gettysburg	125 N. Stratton St.
Woods, David Walker, Jr.	Gettysburg	R. R. 4
Zerbe, Calvin Lee	Pine Grove	323 M. B.
Upper-Middlers, 22.		

LOWER MIDDLE CLASS

Baugher, George Luther	Aspers	321 M. B.
Bender, John Milton	Gettysburg	223 Baltimore St.
Buehler, Arthur Rainger	Gettysburg	249 Carlisle St.
Burger, Keith	Gettysburg	15 E. Middle St.
Butt, Ralph Bernard	Gettysburg	3 Chambersburg St.
Graham, Gordon William	Gettysburg	315 M. B.
Kelly, Allen Wilber	Taneytown, Md.	107 M. B.
Menchey, Helen Catherine	Gettysburg	50 South St.
Pellicer, George	Mexico City, Mexico	104 M. B.
Ridder, John Edward	Gormanania, W. Va.	102 M. B.
Turner, Arthur	London, England	109 M. B.
Ullrich, Joseph Cassell	Lewistown	109 M. B.
Lower-Middlers, 12.		

LOWER SCHOOL

Delap, John Milton	Gettysburg	314 M. B.
Fissel, Catherine Louise	Gettysburg	116 W. Middle St.
Forney, David Crawford	Gettysburg	67 Lincoln Ave.
Forney, George Douglas	Gettysburg	67 Lincoln Ave.
Huber, Charles Henry, Jr.	Gettysburg	411 Carlisle St.
Mayer, Frank Ludwig	Altoona	102 M. B.
McIlhenny, Hugh Cobean	Gettysburg	430 Carlisle St.
McIlhenny, James Harvey	Gettysburg	430 Carlisle St.
Weigle, Richard Gordon	Gettysburg	45 South St.
Weigle, George Saungton	Gettysburg	45 South St.
Lower School, 10.		

1916 STUDENTS *

Crouse, Parker Andrew	Big Cove Tannery	40 S. H.
Funk, David Melancthon	Mineral Point	40 S. H.
Legore, Bruce Stull	Legore, Md.	F.
McCauley, William Ford	Norfolk, Va.	29 S. H.
Total in Academy, 85.		

*Entered after publication of the 1915-1916 Catalog.

SUMMARY.

Number of Students in College 1916-1917.

Graduates	18
Seniors	60
Juniors	61
Sophomores	107
Freshmen	107
Partial Course	33
<hr/>	
Collegiate Department	386
Academy	85
<hr/>	
Total	471

COMMENCEMENT 1916

Salutatory.

Eva Dise

Commencement Orator.

Isaac Rusling Pennypacker,Ardmore, Pa.

Valedictory.

Ottis H. Rechard, Jr.

GRADUATES.

Bachelor of Arts.

Basehoar, Ethel Ruth ¹	Rockey, Ordean
Bell, Martin Luther	Rothfuss, Edgar Lloyd
Bittle, Foster David	Rudisill, Andrew Earl
Collins, Joseph Warfield	Rudisill, Jacob Emanuel
Dise, Eva	Sammel, William Raymond
Dorsey, Besse Viola✓	Schwartz, Ernest David
Garret, Wouter Van	Simonton, Chester Stewart
Glaes, James Sheaffer	Smith, Donald Van Dyke
Grove, William Mervin	Snyder, Lewis Neiffer
Hershey, Phares Robert	Spangler, John Elmer
Hinman, Willis Stuart	Stitt, Hugh Iseman
Hofmann, Frederick William	Stoudt, Lettie Mabel
Keller, Herman August	Sunday, William Franklin
Krebs, Amos John	Swartz, Joshua Goheen
McDonald, James Enzer	Taughinbaugh, Arthur Guy
Mayers, Irving Russell	Tome, John Supplee
Mehring, Percy Leroy	Trattner, Norman Frey
Rechard, Ottis Howard, Jr.	Webner, Clarence George
Reen, Sarah Hunter✓	Weidley, Paul Albert
Rehmeyer, Lewis Herman	Yagle, Jay Arthur

Bachelor of Science.

Albert, LeRoy	McCollough, Charles Boyd
Appler, Guy Milton	Mahaffie, James Eugene
Buehler, Martin Howard	Neu, Paul William
Cassidy, James Clyde	Nicholas, John Spangler
Crilly, Alfred Barry	Park, James Loder
Faber, Fred Samuel	Patrick, William Henry, Ja.
Frysinger, Jacob	Reinecker, Jacob Howard
Hoar, Clarence Victor	Rice, Statton Luther
Hoch, Ralph William	Roth, George
Hurd, Fritz Draper	Scheffer, George Eicholtz
Keckler, Grover Patterson	Taylor, Will Sentman
Kennedy, Edwin Bower	Trundle, George Hedges
Wray, Stanley Manners	

ADVANCED DEGREES.**Master of Arts.**

Elsie Anna Gerlach,	Gettysburg, Pa.
Spurgeon Milton Keeny,	Shrewsbury, Pa.

HONORS AND PRIZES.**GENERAL FINAL HONORS.**

Ottis H. Rechard, Jr.

HIGHEST CLASS HONORS.**Senior.**

Willis S. Hinman	Ottis H. Rechard, Jr.
------------------	-----------------------

Sophomore.

Harold L. Creager	Frederick R. Knubel
-------------------	---------------------

CLASS HONORS.**Senior.**

Eva Dise	Lettie M. Stoudt
Lewis N. Snyder	Paul A. Weidley

Junior.

William A. Boyson

John Max Lentz

Henry E. Starr

Sophomore.

Luther A. Gotwald

Helen N. Musselman

Freshman.

David A. Royer

Raymond T. Stamm

DEPARTMENTAL FINAL HONORS IN MATHEMATICS.

Lewis N. Snyder

GRAEFF PRIZE IN ENGLISH.

Willis S. Hinman

HASSLER PRIZE IN LATIN.

M. Louise Sheads

BAUM PRIZE IN MATHEMATICS.

Harold L. Creager

With Honorable Mention of

Helen M. Musselman

BREWER PRIZE IN GREEK.

Frederick R. Knubel

With Honorable Mention of

Luther A. Gotwald

Ralph L. Wagner

MUHLENBERG FRESHMAN PRIZE.

Raymond T. Stamm

PRIZES IN DEBATE.**First Prize.**

Victor W. Bennett

Paul E. Stermer

Charles L. Venable

Second Prize.

John Croll

R. Malcolm Laird

L. Paul Miller

HONORARY DEGREES**CONFERRED AT COMMENCEMENT 1916.****Doctor of Divinity.**

Rev. Prof. John L. Kistler, ScD.,.....Hartwick Seminary, N. Y.

Rev. August Pohlman, M.D.,.....Philadelphia, Pa.

Rev. John J. Hill,.....Littlestown, Pa.

Rev. S. T. Nicholas,.....Washington, D. C.

Doctor of Laws.

Hon. J. Hay Brown, LL.D.,.....Lancaster, Pa.

President J. H. Morgan, D.D.,.....Carlisle, Pa.

Hon. M. William Jacobs,.....Harrisburg, Pa.

Doctor of Literature.

Isaac Rusling Pennypacker,.....Ardmore, Pa.

Elsie Singmaster Lewars,.....Gettysburg, Pa.

Doctor of Science.

Prof. Harvey W. Shimer, Ph.D.,.....Boston, Mass.

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Founded in 1832

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Congress July 16, 1904

CALENDAR FOR 1917-1918-1919

Session days are indicated by bold-face type.

1917.

September								October								November								December							
S	M	T	W	T	F	S		S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S			
						1	..	1	2	3	4	5	6	..	..	..	..	1	2	3	..	..	..	..	..	..	1
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8				
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15				
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22				
23	24	25	26	27	28	29	28	29	30	31	..	..	..	25	26	27	28	29	30	..	23	24	25	26	27	27	29	
30	30	31				

1918.

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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6	7	8	9	10	11	12	3	4	5	6	7	8	9	3	4	5	6	7	8	9	7	8	9	10	11	12	13
13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16	14	15	16	17	18	19	20
20	21	22	23	24	25	26	17	18	19	20	21	22	23	17	18	19	20	21	22	23	21	22	23	24	25	26	27
27	28	29	30	31	24	25	26	27	28	24	25	26	27	28	29	30	28	29	30
..	31
May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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5	6	7	8	9	10	11	2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
12	13	14	15	16	17	18	9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
19	20	21	22	23	24	25	16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
26	27	28	29	30	31	..	23	24	25	26	27	28	29	28	29	30	31	25	26	27	28	29	30	31
..	30
September							October							November							December						
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8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
29	30	27	28	29	30	31	24	25	26	27	28	29	30	29	30	31

1919.

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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12	13	14	15	16	17	18	9	10	11	12	13	14	15	9	10	11	12	13	14	15	13	14	15	16	17	18	19
19	20	21	22	23	24	25	16	17	18	19	20	21	22	16	17	18	19	20	21	22	20	21	22	23	24	25	26
26	27	28	29	30	31	..	23	24	25	26	27	28	..	23	24	25	26	27	28	29	27	28	29	30	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..
May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	1	2	3	4	5	6	7	..	..	1	2	3	4	..	..	..	..	..	1	2	
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23
25	26	27	28	29	30	31	29	30	..	..	..	..	..	27	28	29	30	31	..	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..

COLLEGE CALENDAR—1917-1918-1919

1917.

September 17, 18. Monday and Tuesday, Entrance Examinations.
 September 19.... Wednesday, 11 A. M., College Year begins.
 September 19.... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 29..... Thanksgiving Day. Holiday.
 December 10..... Monday, 1.30 P. M., Mid-Winter Meeting of Board
 of Trustees in Harrisburg.
 December 19..... Wednesday, Noon. Christmas Recess begins.

1918

January 3..... Thursday, 1 P. M., Christmas Recess ends.
 January 28 to } Monday to Saturday, Examinations closing First
 February 2.... } Semester.
 February 2..... Saturday, Noon, First Semester ends and Second
 Semester begins.
 February 22..... Washington's Birthday. Holiday.
 March 28..... Thursday, Noon, Easter Recess begins.
 April 3..... Wednesday, 8 A. M., Easter Recess ends.
 April 7..... Founders' Day.
 May 21..... Tuesday, Latin Examination for Hassler Prize.
 May 27 to 31.... Monday to Friday, Senior Final Examinations.
 May 30..... Decoration Day. Holiday.
 May 28 to } Tuesday to Monday, General Final Examinations.
 June 10..... }
 June 9..... Sunday, 10.45 A. M., Baccalaureate Sermon.
 June 9..... Sunday, 7 P. M., Discourse before Y. M. C. A.
 June 10..... Monday, 8 P. M., Concert by Combined Musical
 Clubs in Brua Chapel.
 June 10, 11..... Monday and Tuesday, Entrance Examinations.
 June 11..... Tuesday, 9 A. M., Annual Meeting of Board of
 Trustees in Gettysburg.
 June 11..... Tuesday, 10 A. M., Senior Class Day Exercises.
 June 11..... Tuesday, 3 P. M., Alumni Class Reunions.
 June 11..... Tuesday, 4 P. M., Baseball Game on Nixon Field.
 June 12..... Wednesday, 10 A. M., Commencement Exercises.
 June 12..... Wednesday, Noon, Alumni Collation.

Summer Vacation.

August 27..... Tuesday, 8 A. M., Course in Surveying begins.
 September 16, 17. Monday and Tuesday, Entrance Examinations.
 September 18.... Wednesday, 11 A. M., College Year begins.
 September 18.... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 28..... Thanksgiving Day. Holiday.
 December 9..... Monday, 1.30 P. M., Mid-Winter Meeting of Board
 of Trustees in Harrisburg.
 December 18.... Wednesday, Noon, Christmas Recess begins.

1919.

January 3..... Friday, 1 P. M., Christmas Recess ends.
 January 27 to } Monday to Saturday, Examinations closing First
 February 1.... } Semester.
 February 1..... Saturday, Noon, First Semester ends and Second
 Semester begins.
 April 17..... Thursday, Noon, Easter Recess begins.
 April 23..... Wednesday, 8 A. M. Easter Recess ends.
 June 11..... Wednesday, Commencement.

HISTORICAL.

The Charter of Pennsylvania College was approved April 7, 1832. The opening paragraphs are as follows:

“WHEREAS, the literary and scientific institution in Gettysburg, Adams county, in this Commonwealth, known by the name of Gettysburg Gymnasium, is resorted to by a large number of young men from different portions of this State, and elsewhere, and promises to exert a salutary influence in advancing the cause of liberal education; therefore,

“SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the Gettysburg Gymnasium be, and hereby is erected into a College, for the education of youth in the learned languages, the arts, sciences and useful literature.

“SECTION 2. And be it further enacted by the authority aforesaid, That the style and title of said College shall be ‘Pennsylvania College of Gettysburg’ and that it shall be under the management, direction and government of all the subscribers to the funds of said institution, by whose private contributions the said funds have been raised and its present edifice purchased, to wit: John B. McPherson, Thomas C. Miller, Thomas J. Cooper, Samuel Fahnestock, Samuel S. Schmucker, Ernest L. Hazellius, David F. Schaeffer, John G. Morris, Benjamin Kurtz, William Heim, Charles P. Krauth, Frederick D. Schaeffer, J. George Schmucker, J. F. Heyer, Jacob Martin, Abraham Reck, William Ernst, Jacob Medtard, Lewis Eichelberger, Michael Meyerheffer, Jonathan Ruthrauff, Jacob Crigler, John F. Macfarlane, Robert Goodloe

Harper, John Herbst, and their successors, to be elected as hereinafter mentioned."

In SECTION 4 we read: "And at elections either for patrons, or trustees, or teachers, or other officers, and in the reception of pupils, no person shall be rejected on account of his conscientious persuasion in matters of religion, provided he shall demean himself in a sober manner, and conform to the rules and regulations of the College."

The College in a large measure grew out of the necessity of properly preparing men for the Theological Seminary, established in 1826 at Gettysburg. This purpose has never lessened, and to-day the institution regards this as an important feature of its work and offers special opportunities to young men preparing themselves for theological studies. Pennsylvania College in its beginnings and its history is closely identified with the Lutheran Church.

Among the founders of the College special mention should be made of S. S. Schmucker, D.D., Professor in the Theological Seminary at Gettysburg, who was the directing spirit in changing the Gettysburg Gymnasium into a College and who presided unofficially over the College for two years. In the State Legislature were a number of friends of the College, prominent among them being Thaddeus Stevens, the father of the public school system of Pennsylvania. Several appropriations were made to the College by the Legislature. This money was spent in the erection of the building known as Pennsylvania Hall.

The College began without endowment, with one small building (now a residence on the south-east corner of Washington and High streets), and a small attendance. But the wholesome enthusiasm of its able instructors, the loyalty and self-sacrifice of its officers, students, and

alumni, and the devotion of its friends, have made its history down to the very present one of steady and continuous growth. To-day Pennsylvania College is rated as a college of the highest grade by the United States Bureau of Education and the New York State Board of Regents. Her graduates are admitted to all graduate and professional schools without examination.

Following is a list of the Presidents of the College from its foundation to the present time:

1832-34, Samuel S. Schmucker, D.D., Founder.

1834-50, Charles Philip Krauth, D.D., First President.

1850-68, Henry L. Baugher, D.D., Second President.

1868-84, Milton Valentine, D.D., LL.D., Third President.

1884-1904, Harvey W. McKnight, D.D., LL.D., Fourth President.

1904-10, Samuel G. Hefelbower, Ph.D., D.D., Fifth President.

1910-, William A. Granville, Ph.D., LL.D., Sixth President.

LOCATION.

Gettysburg is situated in the beautiful rolling area of the red shale belt of Pennsylvania, with its ridges of intrusive rock. A few miles west is the South Mountain ridge of the Blue Mountains. The situation is healthful, and there is a good supply of filtered water. The town is readily reached from all directions by the Philadelphia & Reading and the Western Maryland Railways, which connect at Harrisburg, Pa., and Baltimore, Md., with the great railway systems of Pennsylvania and the South. Washington, Baltimore, Harrisburg, York, Hagerstown, Chambersburg, Carlisle, and other important centers are also connected with Gettysburg by unusually good roads, making it a very important automobile tourist center. The Coast to Coast Lincoln Way passes through Gettysburg.

The historic association of Gettysburg with the Civil War gives the locality great additional interest. The events of the Battle of Gettysburg are recorded in inscriptions on about fourteen hundred monuments and one thousand markers, many of these being of large size and of great artistic merit. The United States Battlefield Commission has made the field accessible by over forty miles of very fine avenues, along which are the markings that show the battle lines. Miles of the rifle pits and other intrenchments have been preserved, as well as scores of lunettes. Here also is the National Cemetery where Lincoln made his memorable dedicatory speech. Among the thousands of travelers visiting the field are many men of national prominence who often speak to the student body. Such surroundings develop a love of our united country and inspire to better citizenship.

The college buildings were all used as hospitals during and after the Battle of Gettysburg; and the Fiftieth Anniversary of the Battle of Gettysburg Commission had its headquarters on the campus, July 1-4, 1913.

BOARD OF TRUSTEES

Elected.

1890.	HON. SAMUEL McC. SWOPE*	Gettysburg
1890.	WILLIAM H. DUNBAR, D.D.*	Baltimore, Md.
1892.	THOMAS C. BILLHEIMER, D.D.*	Gettysburg
1893.	JOHN WAGNER, D.D.*	Hazleton
1896.	JOHN B. MCPHERSON, Esq.	Boston, Mass.
1897.	WILLIAM A. SHIPMAN, D.D.*	Johnstown
1898.	HENRY C. PICKING	Gettysburg
1899.	CHARLES F. STIFEL	Pittsburgh
1899.	HENRY H. WEBER, D.D.	York
1902.	CHARLES BAUM, M.D., PH.D.	Philadelphia
1906.	SAMUEL G. HEFELBOWER, PH.D., D.D.	Topeka, Kan.
1907.	MARTIN H. BUEHLER	Baltimore, Md
1907.	HON. R. WILLIAM BREAM	Gettysburg
1907.	FREDERICK H. BLOOMHARDT, M.D.	Altoona
1907.	ALPHEUS EDWIN WAGNER, D.D.	Gettysburg
1908.	WILLIAM J. GIES, PH.D., Sc.D*	New York, N. Y.
1908.	WILLIAM L. GLATFELTER	Spring Grove
1908.	FRANK E. COLVIN, Esq.	Bedford
1908.	JOHN F. DAPP	Harrisburg
1908.	GEORGE B. KUNKEL, M.D.	Harrisburg
1908.	JACOB A. CLUTZ, D.D.	Gettysburg
1910.	WILLIAM A. GRANVILLE, PH.D., LL.D.	Gettysburg
1910.	CHARLES J. FITE	Pittsburgh
1910.	BURTON F. BLOUGH	Harrisburg
1912.	CHARLES H. BOYER	Chicago, Ill.
1912.	WINSLOW S. PIERCE, Esq.	New York, N. Y.
1913.	HON. LUTHER A. BREWER	Cedar Rapids, Ia.
1914.	FREDERICK H. KNUBEL, D.D.	New York, N. Y.
1914.	PERCY D. HOOVER, M.D.	Waynesboro
1915.	LESLIE M. KAUFFMAN, M.D.	Kauffman's
1915.	HARVEY C. MILLER	Philadelphia
1916.	HON. J. FRANCIS GRAFF	Worthington
1916.	JOHN B. McALISTER, M.D.	Harrisburg
1916.	MARION J. KLINE, D.D.	Altoona
1917.	JEREMIAH ZIMMERMAN, D.D., LL.D.	Syracuse, N. Y.

Officers.

JOHN F. DAPP	President
HON. SAMUEL McC. SWOPE	Vice President
HENRY C. PICKING	Secretary and Treasurer

*Designated as Alumni Trustees, having been elected on nomination by the Alumni Association.

STANDING COMMITTEES OF THE BOARD.

Executive Committee.

	Term Expires
MARTIN H. BUEHLER, Chairman.....	1920
THOMAS C. BILLHEIMER, D.D.....	1919
HENRY C. PICKING.....	1918
JACOB A. CLUTZ, D.D.....	1922
WILLIAM L. GLATFELTER.....	1921
JOHN F. DAPP.....	Ex-officio
WILLIAM A. GRANVILLE, PH.D., LL.D.....	Ex-officio

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HON. SAMUEL MCC. SWOPE, Chairman
 HENRY C. PICKING
 HON. R. WILLIAM BREAM
 THOMAS C. BILLHEIMER, D.D.
 WILLIAM A. GRANVILLE, PH.D., LL.D.

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 WILLIAM H. DUNBAR, D.D.
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 JOHN WAGNER, D.D.
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GEORGE B. KUNKEL, M.D., Chairman
 CHARLES BAUM, M.D., PH.D.
 FREDERICK H. BLOOMHARDT, M.D.

Committee on Charter.

FREDERICK H. KNUBEL, D.D., Chairman
 JOHN B. MCPHERSON, Esq.
 WILLIAM J. GIES, PH.D., Sc.D.

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Dean and Pearson Professor of Latin
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- STEPHEN REMINGTON WING, M.E. (Cornell).....213 Springs Ave.
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Burton F. Blough Professor of Civil Engineering
- JOHN H. ASHWORTH, PH.D. (Johns Hopkins).....159 Broadway
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- REV. MILTON H. VALENTINE, D.D. (Pennsylvania)..143 Springs Ave.
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Professor of History
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University)147 Broadway
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- GILBERT WILSON, PH.D., D.D.....Chicago
Stuckenberg Lecturer on Sociology
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Academy
- VICTOR WILSON BENNETT, A.B.....Room 317 G. A.
Assistant in College Accounting and Master in English and
History in Gettysburg Academy
- LAURAN DELK SOWERS, A.B.Room 306 G. A.
Master in German in Gettysburg Academy
- JOHN FRANCIS WINKELBLECH, A.B.Seminary
Master in Greek in Gettysburg Academy

RALPH IRL SHOCKEY	362 C.
Student Assistant in Chemistry Laboratory	
WALLACE MORGAN McNABB	362 C.
Student Assistant in Chemistry Laboratory	
GEORGE REICH MILLER	Room 331 McK.
Student Assistant in Physics Laboratory	
BERNARD GEHAUF	Room 360 C.
Student Assistant in Physics Laboratory	
ARTHUR KENNETH SNYDER	Room 342 McK.
Student Assistant in Drawing	
GRUND FREDERICK BECKMEYER	Room 227 P.
Student Assistant in Biology	

ADDITIONAL OFFICERS AND EMPLOYEES.

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Curator of Museum	
KARL JOSEF GRIMM, Ph.D.....	228 Carlisle St.
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REV. MILTON H. VALENTINE, D.D.....	143 Springs Ave.
Chaplain	
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Assistant to the President	
HENRY C. PICKING, A.M.....	Office, 16 Center Square
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MISS SALLIE P. KRAUTH	3 Baltimore St.
Assistant Librarian	
MISS MARY HAY HIMES, A.M.....	130 Carlisle St.
Assistant Librarian	
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Secretary to the President	

THE FACULTY

13

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Preceptress in Gettysburg Academy	
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Assistant in Military Science and Tactics	
CHARLES FRANKLIN SNYDER	Room 211 P.
Proctor in Pennsylvania Hall	
LOUIS K. SCHEFFER	Room 337 McK.
Proctor in McKnight Hall	
MAX CRAWFORD FLOTO	Room 260 C.
Proctor in Cottage Hall	
GEORGE BUSH BAKER	Athletic Field House
Proctor in Athletic Field House	
HARRY LUTHER SAUL	Room 410 P.
Assistant Proctor in Pennsylvania Hall	
RALPH LA SHELLE WAGNER.....	Room 124 P.
Custodian of Reading Room	
EUGENE MERLE GILLETTE	Room 358 C.
Assistant to Registrar	
JOHN B. HAMILTON.....	128 Washington St.
Superintendent of Buildings and Grounds	
JOHN C. HAMILTON	205 Buford Ave.
Engineer and Watchman	
LUTHER O. BEITLER	127 Washington St.
Fireman and Watchman	
MRS. EMMA BELLE NOLL	Room 114 G. A.
Stewardess in Gettysburg Academy	
S. FRANKLIN WETZEL	48 Stevens St.
Engineer in Gettysburg Academy	
MRS. S. FRANKLIN WETZEL	48 Stevens St.
Matron in Gettysburg Academy	
JOSEPH CARVER.....	4 Campus
Janitor	
MERVE CARVER	4 Campus
Janitor	

COMMITTEES OF THE FACULTY.

Class Advisers.

PROFESSOR STAHLEY, Senior Class
PROFESSOR SANDERS, Junior Class
PROFESSOR PARSONS, Sophomore Class
PROFESSOR BREIDENBAUGH, Freshman Class

Entrance.

BIKLE, GRIMM, LAMOND.

Library.

GRIMM, GRANVILLE.

Bulletin.

HAGEN, PARSONS, ASHWORTH, BARNEY,
GRANVILLE, Ex-officio.

Hour Schedule.

BREIDENBAUGH, GRIMM.

Students' Publications.

HAGEN, GRIMM, BIKLE.

Supervision of Finance of Student Organizations.

ASHWORTH, SANDERS, LAMOND.

College Discipline.

BIKLE, STAHLEY, VALENTINE, SANDERS, ASHWORTH.

Lectures.

BIKLE, ASHWORTH.

Advanced Degrees.

GRIMM, BIKLE, STAHLEY.

Representative on Athletic Council.

LAMOND.

Supervision of Social Functions.

ALLEN, BIKLE.

Student Employment.

GRANVILLE, BIKLE.

Student Organizations.

BREIDENBAUGH, WING, BARNEY.

Dormitory Rooms.

BARNEY, PICKING, STOVER.

ATHLETIC COUNCIL.

JOHN K. LAMOND, Faculty Representative, President.

DOYLE REVERE LEATHERS, '13, Athletic Director, Vice-President.

SAMUEL F. SNYDER, '09, Graduate Athletic Manager, Secretary.

ARTHUR E. RICE, '04, Alumni Representative, Treasurer.

GEORGE W. NICELY, '01, Alumni Representative.

DAVID M. HEFFLEFINGER, '19, Student Representative.

NELSON F. FISHER, '18, Ex-officio, President of the College Athletic Association.

JOHN F. DAPP, ex-'89, Ex-officio, President of the Board of Trustees.

WILLIAM A. GRANVILLE, Ex-officio, President of the College.

STUDENT COUNCIL 1916-1917.

LUTHER A. GOTWALD, '18, President.

DONALD F. LYBARGER, '19, Vice-President.

HARRY L. SAUL, '18, Corresponding Secretary.

HARRY W. SLANKER, '20, Recording Secretary.

WILLIAM C. GAUGER, '18, Treasurer.

SAMUEL S. SHAULIS, '21, Messenger.

NELSON F. FISHER, '18.

ROBERT S. MILLER, '19.

CLIFFORD Z. MOYER, '19.

CLARENCE A. NEAL, '20.

ADMISSION.

Applicants for admission are required to present evidence of a good moral character. Students coming from other schools must present certificates of good standing and regular dismissal from the institutions which they have left. No distinctions are made as to sex, except that only male students are admitted to the college dormitories. Women students may secure first-class accommodations in the town with good families and at very reasonable rates by writing to the Registrar.

METHOD OF ADMISSION.

The method of admission is either by examinations or by certificates from approved secondary and high schools or from private instructors. Such certificates should state the amount of work done and the time spent on each subject, together with the grades received. *The official forms for certificates,** which may be had on application to the Registrar, *should be used in all cases*, in order to insure the presentation of the necessary information for the Entrance Committee which passes on all applications for admission. These certificates should be filled out and returned to the Registrar as early as possible before the opening of the college year. Entrance examinations are held on the Monday and Tuesday preceding the opening of the college year and on the Monday and Tuesday of Commencement Week.

REGISTRATION.

Every student who registers at Pennsylvania College should call on the Registrar before or at the opening of College, pay the Registration Fee of \$5.00, be informed as to the action of the Entrance Committee, receive registration blanks, and be instructed in the manner of filling

* A copy of this blank has been bound into this Bulletin inside of the front cover for the convenience of applicants. Detach it along the perforations, fill it out and send it to the Registrar.

them out. He should arrange his course of study under the guidance of his Group Adviser. He should also submit his schedule of studies, properly endorsed by the Group Adviser, to the Registrar within one week from the opening of College.

REQUIREMENTS FOR ADMISSION.

The scholarship requirement for admission to the Freshman Class is thoro preparation in fifteen units of work in an approved secondary school. A *unit* of work in any subject is the amount of work that may be done in a standard secondary school in a year of thirty-six weeks, with five recitation periods of forty-five minutes each, per week.

PRESCRIBED SUBJECTS FOR ADMISSION.

Of these fifteen units required for admission, the following *five and a half* are required of all candidates:

English	3* units
Mathematics	
A. Algebra	1½ units
B. Plane Geometry	1 unit

ELECTIVE SUBJECTS FOR ADMISSION.

To make up the total of fifteen units the candidate for admission may offer any of the following (under the conditions stated in connection with each Group of College studies, pages 28-59) :

Greek.

- A. Grammar and four books of Xenophon.....2 units.
- B. Composition, three books of Homer, and sight translation

Latin.

- A. Grammar and four books of Caesar2 units.
- B. Composition and six books of Cicero1 unit.
- C. Six books of Vergil1 unit.

German.

- Two or three years2 or 3 units.

* As the first English work in the high school or preparatory school course is largely grammar, the credit granted in English is one unit less than the number of years of work in this subject.

French.

Two years2 units.

Spanish.

Two years2 units.

Mathematics.C. Solid Geometry $\frac{1}{2}$ unit.D. Plane Trigonometry $\frac{1}{2}$ unit.**Mechanical Drawing.**One year $\frac{1}{2}$ or 1 unit.**History.**United States $\frac{1}{2}$ or 1 unit.England $\frac{1}{2}$ or 1 unit.Ancient $\frac{1}{2}$ or 1 unit.Medieval $\frac{1}{2}$ or 1 unit.**Geography, Political and Physical** $\frac{1}{2}$ or 1 unit.**Chemistry.**

One year with laboratory work1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**Physics.**

One year with laboratory work1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**Botany.**

One year with laboratory work1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**Zoölogy.**

One year with laboratory work1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**ADDITIONAL SUBJECTS.**

Certificates will be accepted in Civics, Astronomy, Geology and General Science; also in Commercial Geography and Bookkeeping when offered for admission to the Commerce-Finance Group; also in Manual Training and Shop Work (to count not more than half a unit in each case) when offered for admission to any of the Engineering Groups.

DEFICIENCY IN ADMISSION.

To receive the full advantages of a college course a student must have a thoro entrance preparation. Those who are insufficiently prepared for the class they enter

do not generally make satisfactory progress in their work. Fifteen units of entrance work are required for unconditional admission to the College; but students who lack not more than two units of entrance requirements of any group may register as conditioned freshmen. In such cases the entrance deficiency must be satisfied by enrollment in the Gettysburg Academy or under an approved tutor. Such enrollment must take place at the time of registration in the College. Work thus done in satisfying an entrance deficiency does not give College credit, but does count as part of the current work of the student in estimating the number of hours in which he may be enrolled.

ADMISSION TO ADVANCED STANDING.

A candidate for advanced standing must satisfy the entrance requirements and in addition must submit evidence of the satisfactory character of the work for which advanced credit is asked.

No one is admitted to the College after the beginning of the Senior year except by special action of the Faculty.

PARTIAL COURSE STUDENTS.

Persons so situated that they are not able or do not wish to pursue a course of study leading to a degree, are admitted as partial course students in such subjects as examination may show they are prepared to pursue with advantage. Such students are required to offer for entrance not less than eleven units of preparatory work, and their weekly schedule must include not less than twenty-eight semester hours.

SPECIAL STUDENTS.

Students of the Theological Seminary are admitted to one or more courses in the College.

The Faculty may also admit to one or more courses such applicants as have special qualifications for the subjects they desire to pursue.

HONOR SYSTEM IN EXAMINATIONS.

Every student entering College must sign a statement in the Registrar's office expressly accepting this Honor System. Failing to do so he will be suspended until this requirement is satisfied.

ADMISSION SUBJECTS IN DETAIL.

ENGLISH.

In English the study of the following books, recommended by the National Conference on Uniform Entrance Requirements. This is required for 1918-1919.

A. Reasonable familiarity with the substance of the work:

The following are preferred, tho any of the alternatives specified in the Uniform Entrance Requirements for 1915-1919 are accepted:

Shakespeare's "Merchant of Venice" and "Julius Caesar"; Addison's "Sir Roger de Coverley Papers"; Goldsmith's "Deserted Village"; Scott's "Ivanhoe" and "Lady of the Lake"; George Eliot's "Silas Marner"; Irving's "Sketch Book"; Tennyson's "Gareth and Lynette," "Lancelot and Elaine," and "Passing of Arthur"; Ruskin's "Sesame and Lilies."

B. More careful and specific study:

Shakespeare's "Macbeth"; Milton's "Lycidas"; "Comus," "L'Allegro," and "Il Penseroso"; Washington's "Farewell Address"; Webster's "First Bunker Hill Oration"; Carlyle's "Essay on Burns."

The examination will be in two parts,—one of questions on grammar, rhetoric, and composition, the other of questions on the literature specified above.

In the first part, candidates will be asked specific questions and given particular exercises in word-choice, sentence structure, the principles of paragraphing, and other such matters as a student seeking college standing should be proficient in. The examination in literature will require reasonable familiarity with the books and the authors mentioned under "A" above (or those accepted in substitution for them); and fairly thoro knowledge and appreciation of the books and the authors named under "B" above.

No candidate will be accepted in English whose work is seriously defective in spelling, punctuation, grammar, choice of words, sentence structure, paragraphing, or other essentials of good usage.

MATHEMATICS.

A. Algebra. The four fundamental operations for rational algebraic expressions; factoring, determination of the highest common factor and least common multiple by factoring; fractions, involution, evolution, radicals, and imaginary quantities. Equations of the first and second degree, ratio and proportion, progressions; binominal theorem for positive integral exponents, and permutations and combinations limited to simple cases.

B. Plane Geometry. Five Books. Demonstration of theorems and constructions, including rectilinear figures, circles, proportional lines, and similar figures; comparison and measurement of surfaces, including triangles, regular polygons, and circles; maxima and minima; originals.

C, D. The entrance requirements in Solid Geometry and Plane Trigonometry are similar to the work done in these subjects in the College course as given on page 84. For advanced standing in Solid Geometry and Trigonometry, candidates must present note-books and other evidence of thoro work.

POLITICAL AND PHYSICAL GEOGRAPHY.

The requirement in Political Geography may be met by the study of any good text-book. The requirement in Physical Geography may be met by the study of any text-book equivalent to Gilbert and Bringham's "Introduction to Physical Geography," Davis' "Elementary Physical Geography," or Tarr's "New Physical Geography."

GREEK.

A1. Grammar. The candidate must have familiarized himself with the essentials of grammar, namely, the

inflections of substantives and verbs; the syntax of cases, and the moods and tenses of the verb; the simple rules for the composition and derivation of words; the structure of sentences, with particular regard to conditional and relative sentences, indirect discourse, and final clauses.

A2. Xenophon. The first four books of "Anabasis."

B1. Prose Composition. The requirements in prose composition involve the ability to translate into idiomatic Greek, continuous narrative based on Xenophon's "Anabasis," Book II, and other Attic prose of similar difficulty. Due regard must be paid to the principles and practice of accentuation.

B2. Homer. The first three books of the "Iliad" (omitting II, 494-end) or of the "Odyssey," including the Homeric forms, constructions, and prosody.

B3. Sight Translation. One of the most important assets which a student can bring to the study of college Greek is the ability to read easily at sight passages of equal difficulty with the "Anabasis" or the "Hellenica." For this purpose he should memorize as a working vocabulary the principal words in Xenophon and the three books of Homer.

(See pages 63 and 64 for Beginners' Greek in College.)

LATIN.

A1. Grammar. Allen and Grenough's preferred.

A2. Caesar's "Gallic War," Books I-IV.

B1. Prose Composition, including the translation of English passages on Caesar and Cicero.

B2. Six Orations of Cicero, including at least two against Catiline, the one for Archias, and the one for the Manilian Law.

C. Vergil's "Aeneid," Books I-VI, and so much prosody as relates to Latin versification in general and the dactylic hexameter in particular.

Equivalents will be accepted for work done in Sallust or Ovid or other authors of equal rank.

GERMAN.

The requirements in German presuppose a systematic course extending over at least two years of school work.

The candidate is expected to be able to pronounce German clearly and distinctly. He must possess an accurate knowledge of the rudiments of grammar, and should have acquired an elementary German vocabulary. He should be able to translate easy prose and poetry, and to put into German simple English sentences taken from the language of every-day life and easy selections from English narrative prose.

FRENCH.

The requirements in French correspond to those in German, and include the ability to pronounce French accurately, to read easy French prose, to put into French simple English sentences taken from the language of every-day life and easy selections from English narrative prose, and a good knowledge of the rudiments of French grammar.

SPANISH.

The requirements in Spanish correspond to those in French.

MECHANICAL DRAWING.

Drawings, accompanied by a certificate from the instructor, must be submitted. One unit credit will be allowed in cases where not less than two hundred hours of work has been devoted to the subject.

HISTORY.

A. *United States.* Montgomery's "Leading Facts of American History," or its equivalent.

B. English. Walker's "Essentials of English History," or its equivalent.

C. Ancient. Myers' "Ancient History," or its equivalent.

D. Medieval and Modern. Myers' "Medieval and Modern History," or its equivalent.

CHEMISTRY.

The candidate should have such knowledge of the general principles of the science and the properties of the more important elements as may be obtained by a careful study of a text-book of the scope of Remsen's "Introduction to the Study of Chemistry, Briefer Course."

The pupil should have performed in the laboratory experiments in number and general character the equivalent of those given in Remsen's "Introduction." The record of this work must be contained in a note-book describing in the pupil's own words the materials used, the apparatus employed (with drawings), the changes occurring, and the resulting products, with the conclusions properly drawn from the phenomena observed.

This note-book must be presented bearing the following endorsement by the instructor: "This note-book is a true and original record of experiments actually performed by — in — school during the year —."

PHYSICS.

A good high school course, using any standard high school text, covering the simple principles of Physics, descriptive and experimental rather than mathematical, including not less than three class periods and two hours of laboratory work a week for one year.

BOTANY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to text-book and laboratory study of this subject with the aid of Bergen's "Essentials of Botany" or some other standard book of equal merit. Drawings and note-books are required.

ZOÖLOGY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to this subject. Davidson's "Practical Zoölogy" or any other standard book of equal grade will be accepted. Note-books and drawings must accompany the certificate.

THE GROUP SYSTEM OF COURSES.

The courses of study in the College are arranged in ten groups. These groups are designed to be of equal value in the mental training of the student. This arrangement accomplishes several purposes. It enables the student to select those subjects which are of special value in preparation for subsequent professional study or business. In the first six groups it provides for a general training and broad culture which requires the student not to specialize but to concentrate a fair proportion of his time and energy on one or two related subjects. This gives a fuller training of the mental powers than results from a more diffused and often aimless selection of studies in a too largely elective system.

In addition to these groups of non-professional courses, groups have been established in Civil, Municipal, Mechanical, and Electrical Engineering.

The groups of studies are described in detail on pages 28 to 59 with entrance requirements for each.

VALUE OF A SEMESTER HOUR OF COLLEGE WORK.

A semester hour of college work consists of the equivalent of one weekly exercise for one semester, either a recitation, a lecture, a laboratory period of two and a half or three hours, or an assignment of equivalent work on which an examination is held. A weekly exercise for one semester consisting of one lecture hour in connection with two laboratory hours counts as one semester hour.

OUTLINE OF GROUPS

GROUP I.—GREEK AND LATIN.

Group Adviser: Professor Biklé.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; Latin A, B, C, 4 units; Greek A, B, 3 units, or German, 3 units; and 2½ elective units.

This Group is especially recommended for its cultural value and as a preliminary training course for those intending to enter the ministerial, legal, medical, journalistic, or teaching profession, and also provides a foundation for advanced language study.

This Group leads to the degree of **Bachelor of Arts**.

The following Schedule of Studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek*: Xenophon (Hellenica) Ly-	I*	3	2*	3	63
sias,	A*	3	A*	3	63
or Greek*: First Year Greek					
Latin: Livy, Horace (Odes), Cicero	1, 2	3	2, 3	3	65
(De Senectute)	A	3	A	3	60
English: English Composition					
History: Political History of Modern	I	2	I	2	71
Europe	I	I	I	I	70
English Bible: General Introduction					
Mathematics: Plane Trigonometry,	I	3	1, 2	3	84
Solid Geometry	I	3	I	3	81
Chemistry: General Chemistry	I	I	2	I	101
Military Science: (Optional)					
Total Semester Hours	18-19		18-19		

*Students offering German for admission will take Greek A, and those offering Greek for admission will take Greek 1 and 2.

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek*: Plato (Apology and Crito), Homer (Odyssey),	3*	3	4*	3	63
or Greek*: Second Year Greek	B*	3	B*	3	63
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	65
German*: Elementary German,	B*	3	B*	3	61
or German*: Composition, Conversation, Modern Prose	1*	3	1*	3	61
English: English and American Literature	1	2	1	2	60
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	72, 73
Military Science: (Optional)	3	1	4	1	102
Electives:		3		3	
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek†: Xenophon (Hellenica), Lysias	1†	3	2†	3	63
English: Shakespeare	2	2	2	2	60
German: Composition, Conversation, Modern Prose,	1	3	1	3	61
or German: German Classics,	2	3	2	3	62
or French: Elementary French	A	3	A	3	67
Economics: Principles of Economic Theory	1	3	1	3	76
Christian Evidences:	1	2			70
Philosophy: Logic	3	2			73
Philosophy: Ethics			5	2	73
Physics: Elements of Physics	A	4	A	4	85
or Physics: General Physics (Mechanics, Sound, and Heat),	1	3	1	3	86
and Physics†: Laboratory Physics	5	2	6	2	86
Elective: Military Science	2†	1	2†	1	102
Electives:		2		4	
Total Semester Hours	16-20		16-20		

*Students offering German for admission will take Greek B and German 1, and those offering Greek for admission will take Greek 3 and 4 and German B, in the Sophomore Year.

†Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

‡In some cases Physics 1 may be taken without Physics 2 (if approved by the Group Adviser and Instructor).

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Greek*: Plato (Apology and Crito), Homer (Odyssey)	3*	3	4*	3	63
Philosophy: History of Philosophy	6	3	6	3	73
Philosophy: Theism			8	2	74
Electives:	9-15		7-13		
It is suggested that these be chosen from the following:					
Latin: Terence, Latin Literature, Roman Law	9, 10	2	10, 11	2	66
Greek: Euripides, Greek History	5	2	6	2	64
Modern Language:	2 or 3	2 or 3	2 or 3	2 or 3	61-69
English: Public Speaking	5	2	5	2	61
History: English History, United States History	2	3	3	3	71
History: The German Empire and its Present Organization, Era of Re-formation	4	3	5	3	72
Education: History of Education, Pedagogy	1	3	2	3	75
Education: School Organization and Method of Teaching	3	2			75
Comparative Philology:	1	1	1	1	69
Biology: Personal and Public Hy- giene	9	1	9	1	81
Physics: Electricity and Light	3, 4	4	3, 4	4	86
Military Science:	7	2	8	2	103
<hr/>					
Total Semester hours	16-20		16-20		

*Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

GROUP II.—LATIN AND MODERN LANGUAGES.

Group Adviser: Professor Grimm.

Entrance Requirements: English, 3 units; Mathematics A, B, 2½ units; Latin A, B, C, 4 units; 2 units of German or French or Spanish or Greek; History, 1 unit; and 2½ elective units.

This Group is recommended for its cultural value and is further well adapted to preparation for the legal or teaching professions or for literary pursuits. The emphasis is laid on Latin and the Modern Languages, and provision is made for those who wish to make a special study of them.

This Group leads to the degree of **Bachelor of Arts**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the Course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Number	Credit	Number	Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	65
German*: Composition, Conversation, Modern Prose,	I*	3	I*	3	61
or German*: Elementary German,	A*	3	A*	3	61
or French*: Elementary French,	A*	3	A*	3	67
or French: Grammar, Composition, Modern Prose	I*	3	I*	2	67
English: English Composition	A	3	A	3	60
History: Political History of Modern Europe	I	2	I	2	71
English Bible: General Introduction	I	1	I	1	69
Mathematics: Plane Trigonometry, Solid Geometry	I	3	2	3	84
Biology: General Biology, Zoölogy	1, 2	3	2, 3	3	79
or Chemistry: General Chemistry,	I	3	I	3	81
or Physics: Elements of Physics,	A	4	A	4	85
or Physics: General Physics (Mechanics, Sound, and Heat),	I	3	I	3	86
and Physics†: Laboratory Physics	2†	1	2†	1	86
Military Science: (Optional)	I	1	2	1	101

Total Semester Hours

18-20

18-20

*Students offering German or French for admission will take German 1 or French 1; others German A or French A.

†In some cases Physics 1 may be taken without Physics 2 (if approved by the Group Adviser and instructor).

Sophomore Year.

	First Semester.		Second Semester.		
	Number	Credit	Number	Credit	Page
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5 2	3 3	5, 6 2	3 3	65 62
German: German Classics,					
or German: Composition, Con-	I	3	I	3	61
versation, Modern Prose	A or B	3	A or B	3	61
or German:	3	3	3	3	67
French: Seventeenth Century					
French: Grammar, Composition,	I	3	I	3	67
Modern Prose,	A	3	A	3	67
or French: Elementary French					
English: English and American	I	2	I	2	60
Literature					
Philosophy: Psychology, Intro-	I	2	2	2	72, 73
duction to Philosophy	3	1	4	1	102
Military Science: (Optional)					
Electives:		3		3	
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
German: Epochs of German					
Literature,	4	3	4	3	62
or German: German Classics	2	3	2	3	62
French: Seventeenth Century	3	3	3	3	67
or French: Grammar, Composi-					
tion, Modern Prose	I	3	I	3	67
English: Shakespeare	2	2	2	2	60
English: English Novel or Anglo-					
Saxon	3, 4	2	3, 4	2	60, 61
Economics: Principles of Eco-					
nomie Theory	I	3	I	3	76
Christian Evidences:	I	2			70
Philosophy: Ethics			5	2	73
Elective: Military Science	5	2	6	2	102
Electives:		I-4		I-4	
Total Semester Hours	16-20		16-20		

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Languages:		6+		6+	61-69
Electives:		10+		10+	
Military Science:	7	2	8	2	103
Those looking toward teaching are advised to elect:					
Education: History of Education, Pedagogy	1	3	2	3	75
Education: School Organization and Method of Teaching	3	2			75
Philosophy: Logic	2	2			73
Total Semester Hours	16-20		16-20		

GROUP III.—HISTORY AND POLITICAL SCIENCE.**Group Adviser:** Professor Valentine.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; Latin A, B, C, 4 units; 2 units of German or French or Spanish or Greek; History, 2 units; and 1½ elective units.

In this Group emphasis is laid on the historical studies and on Political Science and Economics. The Group is intended to lay the foundations for professional legal studies and to prepare for the teaching of these subjects.

This Group leads to the degree of **Bachelor of Arts.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	I, 2	3	2, 3	3	65
German*: Composition, Conversation, Modern Prose,	I*	3	I*	3	61
or German*: Elementary German,	A*	3	A*	3	61
or French: Elementary French	A	3	A	3	67
English: English Composition	A	3	A	3	60
History: Political History of Modern Europe	I	2	I	2	71
English Bible: General Introduction	I	1	I	1	69
Mathematics: Plane Trigonometry, Solid Geometry	I	3	2	3	84
Biology: General Biology, Zoölogy,	I, 2	3	2, 3	3	79
or Chemistry: General Chemistry,	I	3	I	3	81
or Physics: Elements of Physics,	A	4	A	4	85
or Physics: General Physics (Mechanics, Sound, and Heat),	I	3	I	3	86
and Physics†: Laboratory Physics	2†	2	2†	1	86
Military Science: (Optional)	I	1	2	1	101

Total Semester Hours

18-19

18-19

*Students offering Greek for admission will take German A in the Freshman Year (if electing German); those offering German for admission will take German 1 (or French).

† In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	65
German: German Classics	2	3	2	3	62
or German: Composition, Conversation, Modern Prose,	1	3	1	3	61
or French: Grammar, Composition, Modern Prose,	1	3	1	3	67
or French: Elementary French	A	3	A	3	67
English: English and American Literature	1	2	1	2	60
Political Science: Comparative Government, Political Parties	1	3	2	3	78
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	72, 73
Military Science: (Optional)	3	1	4	1	102
Electives:		3		3	
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	60
Economics: Principles of Economic Theory	1	3	1	3	76
Economics†: Labor Problems, Business Organization	7†	3	8†	3	77
or Political Science*: International Law, Constitutional Law	3*	3	4*	3	78
History†: English History, United States History,	2†	3	3†	3	71
or History*: The German Empire and its Present Organization, Era of Reformation	4*	3	5*	3	72
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	73
Elective: Military Science	5	2	6	2	102
Electives:		3-6		3-6	
Total Semester Hours	16-19		16-19		

*Given 1918-1919 and alternate years.

†Given 1917-1918 and alternate years.

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Economics †: Labor Problems, Business Organization	7†	3	8†	3	77
or Political Science *: International Law, Constitutional Law	3*	3	3*	3	78
History *: The German Empire and its Present Organization, Era of Reformation,	4*	3	5*	3	72
or History †: English History, United States History	2†	3	3†	3	71
Philosophy †: Sociology	4†	2			73
Electives:	8-II		8-II		
It is suggested that the electives in the Junior and Senior Years be taken from the following:					
Latin: Roman Law	11	1			67
Economics *: Money and Banking, Business Law	2*	3	5*	3	76
Economics: Public Finance	3	3			76
Philosophy: Advanced Logic	9	1			74
Modern Language:	1 or 1½		1 or 1½		61-69
Military Science:	7	2	8	2	103
Total Semester Hours		16-19	16-19		

*Given 1918-1919 and alternate years.

†Given 1917-1918 and alternate years.

GROUP IV.—CHEMISTRY AND PHYSICS.**Group Advisers:**

Chemistry Section: Professor Breidenbaugh.

Physics Section: Professor Parsons.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; 2 units of each of two of the following: Latin, German, French, Spanish; and sufficient electives to make a total of 15 units.

In this Group the emphasis is laid on Chemistry and Physics with the requirement that special attention be given to one of these subjects in the Junior and Senior Years. The Group is intended to prepare for teaching these subjects, or for professional studies in these lines or for advanced work in research laboratories in the field of Chemistry and Physics (both scientific and technical), or for manufacturing and commercial pursuits.

Either the Chemistry or Physics section should be selected on entering the Group; however the choice between Chemistry and Physics as the principal subject is not required to be made until the beginning of the Junior Year.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose,	I	3	I	3	61
or German*: Elementary German	A*	3	A*	3	61
Latin: Livy, Horace (Odes), Cicero (De Senectute),	I, 2	3	2, 3	3	65
or French*: Grammar, Composition, Modern Prose,	I*	3	I*	3	67
or French*: Elementary French	A*	3	A*	3	67
English: English Composition	A	3	A	3	60
History: Political History of Modern Europe	I	2	I	2	71
English Bible: General Introduction	I	1	I	1	69
Mathematics: Plane Trigonometry, Solid Geometry	I	3	2	3	84
Chemistry: General Chemistry	I	3	I	3	81
Military Science: (Optional)	I	1	2	1	101
Total Semester Hours	18-19		18-19		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: German Classics,	2	3	2	3	62
or German: Composition, Conversation, Modern Prose,	I	3	I	3	61
or French*: Seventeenth Century,	3	3	3	3	67
or French*: Grammar, Composition, Modern Prose	I*	3	I*	3	67
English: English and American Literature	I	2	I	2	60
Philosophy: Psychology, Introduction to Philosophy	I	2	2	2	72, 73
Mathematics: Advanced Algebra,	3	3			84
Plane and Solid Analytic Geometry†			4	4	84
Elementary Analysis†			5	3	84
Chemistry: Qualitative Analysis	2	3	2	3	82
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	3	86
Physics: Laboratory Physics	2	1	2	1	86
Military Science: (Optional)	3	1	4	1	102
Total Semester Hours	17-18		17-19		

*Students offering German for admission will take German 1 in the Freshman Year; those offering Latin or French without German for admission will take German A. Those offering French for admission will take French 1 (if electing French); others electing French will take French A.

†For Chemistry Section.

‡For Physics Section.

Junior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	60
Economics: Principles of Economic Theory	1	3	1	3	76
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	73
Chemistry: Quantitative Analysis	3	3	3	3	82
Physics: General Physics (Electricity and Magnetism, and Light)	3	3	3	3	86
Physics: Physical Measurements	4	1	4	1	86
Elective: Military Science	5	2	6	2	102
Electives:		2-5		2-5	
Total Semester Hours	16-19		16-19		

Senior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Scientific German	3	3	3	3	62
or French: Scientific French	4	3	4	3	68
Chemistry: Organic Chemistry A	4	3			82
Chemistry: Organic Chemistry B	4	6			82
Chemistry: Industrial Chemistry			8	3	83
Chemistry: Special Quantitative Methods			7	6-8	83
Electives:		4-6		2	
Military Science:	7	2	8	2	103
Students intending to engage in Chemical work or in teaching Chemistry are advised to elect from the following list:					
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2	83
Geology and Mineralogy: Mineralogy	3	2	3	2	83
French:	2 or 3		2 or 3		68
German:	2 or 3		2 or 3		62
Spanish: Elementary Spanish	1	3	1	3	69
Education:		3		3	75
Total Semester Hours	16-18		16-18		

Junior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	60
Economics: Principles of Economic Theory	1	3	1	3	76
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	73
Mathematics: Differential and Integral Calculus	6	4	6	4	85
Physics: General Physics (Electricity and Magnetism, and Light)	3	3	3	3	86
Physics: Physical Measurements	4	1-2	4	1-2	86
Elective: Military Science	5	2	6	2	102
Electives:		0-4		0-4	
Total Semester Hours	16-19		16-19		

Senior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Scientific German	3	3	3	3	62
or French: Scientific French	4	3	4	3	68
Mathematics: Differential Equations	7	3			85
Physics: Physics Seminary	11	1	11	1	87
Physics: Advanced Laboratory Physics	10	2	10	2	87
Physics: Recent Advances in Physics,	7	1	7	1	87
or Engineering: Elements of Electrical Engineering	7	2	7	3	91
Physics: Advanced Courses		2-4		2-4	87
Electives:		3-9		3-9	
Military Science:	7	2	8	2	103
To those intending to pursue advanced work in Physics it is suggested that electives be chosen from the following:					
Modern Languages:	2 or 3		2 or 3		60-69
Physics: Mathematical Physics	8 or 9	2	8 or 9	2	87
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2	83
Biology: General Biology and Zoölogy	1, 2	3	2, 3	3	79
Total Semester Hours	16-19		16-19		

GROUP V.—BIOLOGY, CHEMISTRY, AND PHYSICS.

Group Adviser: Professor Stahley.

Entrance Requirements: English, 3 units; Mathematics A, B, 2½ units; 2 units of each of two of the following: Latin, German, French, Spanish; and sufficient electives to make a total of 15 units.

This Group offers advantages in supplying the essentials of a general science course, and in addition includes those special branches in pre-medical studies which will admit the graduate to any school of medicine he may desire to enter.

To meet the requirements of those medical schools that admit on two years of college work the following course is given:

First year,—German, Latin or French, English, Chemistry, Biology.

Second year,—German or French, English, Chemistry, Biology, Physics, Philosophy.

Members of this Group, by adding certain studies as electives in the Senior year in the Department of Philosophy, will completely meet the teaching requirements of the Pennsylvania School Code.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German* : Composition, Conversation, Modern Prose,	1*	3	1*	3	61
or German* : Elementary German	A*	3	A*	3	61
French* : Grammar, Composition, Modern Prose,	1*	3	1*	3	67
or French* : Elementary French,	A*	3	A*	3	67
or Latin : Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	1, 2	3	65
English : English Composition	A	3	A	3	60
History : Political History of Modern Europe	1	2	1	2	71
English Bible : General Introduction	1	1	1	1	69
Mathematics : Plane Trigonometry, Solid Geometry	1	3	2	3	84
Chemistry : General Chemistry	1	3	1	3	81
Military Science : (Optional)	1	1	2	1	101
Total Semester Hours	18-19		18-19		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German : German Classics,	2	3	2	3	62
or German : Composition, Conversation, Modern Prose,	1	3	1	3	61
or French : Seventeenth Century,	3	3	3	3	67
or French : Grammar, Composition, Modern Prose,	1	3	1	3	67
or French : Elementary French	A	3	A	3	67
English : English and American Literature	1	2	1	2	60
Philosophy : Psychology, Introduction to Philosophy	1	2	2	2	72, 73
Mathematics : Advanced Algebra, Plane and Solid Analytic Geometry	3	3	4	4	84
Chemistry : Qualitative Analysis	2	3	2	3	82
Physics : General Physics, (Mechanics, Sound, and Heat),	1	3	1	3	86
Physics : Laboratory Physics	2	1	2	1	86
Military Science : (Optional)	3	1	4	1	102
Total Semester Hours	17-18		18-19		

*Students offering German for admission will take German 1 in the Freshman Year; those offering Latin or French without German for admission will take German A. Those offering French for admission will take French 1 (if electing French) others electing French will take French A.

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	60
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	73
Biology: General Biology, Zo- ölogy	1, 2	4	2, 3	4	79
Biology: Botany	7	2	7	2	80
Chemistry: Quantitative Analysis	3	3	3	3	82
Physics: General Physics (Elec- tricity and Magnetism, and Light)	3	3	3	3	86
Physics: Physical Measure- ments	4	1	4	1	86
Elective: Military Science	5	2	6	2	102
<hr/>					
Total Semester Hours	17-19		17-19		

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Scientific German	3	3	3	3	62
or French: Scientific French	4	3	4	3	68
Economics: Principles of Economics	1	3	1	3	76
Biology: Human Anatomy and Physiology, Mammalian Histology, Embryology	4	3	5, 6	3	79, 80
Chemistry: Organic Chemistry A	4	3			82
Chemistry: Organic Chemistry C	4	3	4	3	82
Electives:		2-5		2-5	
Military Science:	7	2	8	2	103
Those looking forward to teaching are advised to elect:					
Philosophy: Logic	3	2			73
Education: History of Education, Pedagogy	1	3	2	3	75
Education: School Organization and Method of Teaching	3	2			75
Biology: Personal and Public Hygiene	9	1	9	1	81
Those looking forward to Medicine are advised to elect:					
Political Science: Comparative Government, Political Parties	2 or 3		2 or 3		78
French:	2 or 3		2 or 3		68
or German:	1	3	2	3	62
Biology: Personal and Public Hygiene	9	1	9	1	81
Geology: Dynamical and Historical Geology	1	2	2	2	83
Physics: Recent Advances in Physics			7	2	87
In addition to the above lists, the following are suggested for general culture:					
History: English History, United States History,	2	3	3	3	71
or History: The German Empire and its Present Organization, Era of Reformation	4	3	5	3	72
Total Semester Hours		16-18		16-18	

GROUP VI.—COMMERCE AND FINANCE.**Group Adviser:** Professor Ashworth.

Entrance Requirements: English, 3 units; Mathematics A, B, 2½ units; History, 2 units; 2 units of each of two of the following: Latin, German, French, Spanish; and sufficient electives to make a total of 15 units.

This Group is designed primarily for students who intend to enter business, law or the public service. Especial attention is given to the general principles underlying all lines of business, and to the relation of business to government and politics.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German* : Composition, Conversation, Modern Prose,	I*	3	I*	3	61
or German* : Elementary German	A*	3	A*	3	61
French* : Grammar, Composition, Modern Prose,	I*	3	I*	3	67
or French* : Elementary French	A*	3	A*	3	67
English : English Composition	A	3	A	3	60
History : Political History of Modern Europe	I	2	I	2	71
English Bible : General Introduction	I	1	I	1	69
Mathematics : Plane Trigonometry, Solid Geometry	I	3	2	3	84
Biology : General Biology, Zoölogy,	I, 2	3	2, 3	3	79
or Chemistry : General Chemistry,	I	3	I	3	81
or Physics : General Physics (Mechanics, Sound, and Heat),	I	3	I	3	86
and Physics †:	2†	1	2†	1	86
Laboratory Physics	A	4	A	4	85
or Physics :	I	1	2	1	101
Military Science : (Optional)					

Total Semester Hours

18-20

18-20

*Students offering Greek for admission will take German A in the Freshman Year (if electing German); those offering German for admission will take German 1 (or French).

†In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: German Classics,	2	3	2	3	62
or German: Composition, Conversa-	1	3	1	3	61
tion, Modern Prose,	3	3	3	3	67
or French: Seventeenth Century,	1	3	1	3	67
or French: Grammar, Composition,	1	3	1	3	67
Modern Prose	1	2	1	2	60
English: English and American	1	2	1	2	60
Literature	1	2	1	2	60
Philosophy: Psychology, Introduc-	1	2	2	2	72, 73
tion to Philosophy	1	3	1	3	76
Economics: Principles of Economics	1	3	1	3	76
Political Science: Comparative Gov-	1	3	2	3	78
ernment, Political Parties	6A	3	6A	3	77
Economics: Accounting	3	1	4	1	102
Military Science: (Optional)	3	1	4	1	102
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: German Classics,	2	3	2	3	62
or German: Epochs of German	4	3	4	3	62
Literature,	3	3	3	3	67
or French: Seventeenth Century	1	3	1	3	69
or Spanish: Elementary Spanish	2	2	2	2	60
English: Shakespeare	2†	3	3†	3	71
History†: English History, United	4*	3	5*	3	72
States History,	2*	3	5*	3	76, 77
or History*: The German Empire,	3†	3	6B†	3	76, 77
Era of Reformation	7†	3	8†	3	77
Economics*: Money and Banking,	3*	3	4*	3	78
Business Law,	1	2			70
or Economics†: Public Finance, Ac-	5	2	5	2	73
counting			6	2	102
Economics†: Labor Problems, Busi-					
ness Organization,					
or Political Science*: International					
Law, Constitutional Law					
Christian Evidences:					
Philosophy: Ethics					
Elective: Military Science					
Total Semester Hours	16-18		16-18		

*Given 1918-1919 and alternate years.

†Given 1917-1918 and alternate years.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics* : Money and Banking,					
Business Law,	2*	3	5*	3	76, 77
or Economics† : Public Finance, Ac-					
counting	3†	3	6B†	3	76, 77
Economics† : Labor Problems, Busi-					
ness Organization,	7†	3	8†	3	77
or Political Science* : International					
Law, Constitutional Law	3*	3	4*	3	78
Philosophy† : Sociology	4†	2			73
Electives :		8-10		10-12	
Elective : Military Science	7	2	8	2	103
Total Semester Hours		16-18		16-18	

*Given 1918-1919 and alternate years

†Given 1917-1918 and alternate years.

GROUP VII.—CIVIL ENGINEERING.**Group Adviser:** Professor Allen.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Latin or German or French or Spanish; and sufficient electives to make a total of 15 units.

This Group affords suitable training not only for students who expect to enter this profession, but for those who wish to prepare themselves for callings more or less closely related to engineering. During the first two years emphasis is laid on the underlying natural sciences and on mathematics, while during the last two years technical subjects are introduced. Some liberal arts studies are required, and extreme specialization in instruction is avoided.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose,	I	3	I	3	61
or Latin: Livy, Horace,	I, 2	3	2, 3	3	65
or French: Grammar, Composition, Modern Prose,	I	3	I	3	67
or Spanish: Elementary Course	1	3	I	3	69
English: English Composition,	A	3	A	3	60
Mathematics: Plane Trigonometry	I	3			84
Mathematics: Advanced Algebra	3	3			84
Mathematics: Plane and Solid Analytic Geometry			4	4	84
Chemistry: General Chemistry	I	3	I	3	81
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	3	86
Physics: Laboratory Physics	2	I	2	I	86
Engineering: Mechanical Drawing	I	I	I	I	90
Military Science: (Optional)	I	I	2	I	101
Total Semester Hours		20-21		18-19	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	60
Mathematics: Differential and Integral Calculus	6	4	6	4	85
Chemistry: Qualitative Analysis	2	3			82
Physics: General Physics (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	86
Physics: Physical Measurements	4	1	4	2	86
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	90
Engineering: Mechanics	3	3	3	3	90
Engineering: Metallurgy of Steel			4	1	91
Civil Engineering:			27	1	94
Military Science: (Optional)	3	1	4	1	102
Total Semester Hours	19-20		18-19		

Summer Field Surveying.

Civil Engineering 11.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. Credit of two semester hours. (See page 92).

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	71
English Bible: General Introduction	1	1	1	1	69
Philosophy: Psychology	1	2			72
Mathematics: Astronomy	10	1			85
Geology and Mineralogy: Mineralogy	3	2			83
Physics: Electrical Measurements	6	3			87
Engineering: Hydraulics			5	3	91
Engineering: Materials Testing	6	3			91
Engineering: Elements of Electrical Engineering			7	4	91
Civil Engineering: Mechanics (B), Structural Design	18	2	19	2	93
Civil Engineering: Surveying (B), Office Work	12	2			92
Civil Engineering: Railroads (A)			16	4	92
Military Science: (Optional)	5	2	6	2	102
Total Semester Hours	18-20		16-18		

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. Credit of two semester hours. (See page 92).

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	I	3	I	3	76
Christian Evidences:	I	2			69
Philosophy: Ethics			5	2	73
English: English Novel and Short Story	3	2	3	2	60
Geology and Mineralogy: Dynamical Geology	I	2			83
Civil Engineering: Surveying (B), Office Work	14	2			92
Civil Engineering: Railroads (B)			17	2	92
Civil Engineering: Structural Design	19	3	19	3	93
Civil Engineering: Structural Drafting			20	2	93
Civil Engineering: Contracts and Specifications			21	1	93
Civil Engineering: Masonry	22	3			94
Civil Engineering: Highways			23	2	94
Civil Engineering: Seminary	26	1	26	1	94
Civil Engineering: Sewerage			25	2	94
Military Science: (Optional)	7	2	8	2	103
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Total Semester Hours		18-20		20-22	

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

GROUP VIII.—MUNICIPAL (SANITARY) ENGINEERING.**Group Adviser:** Professor Allen.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Latin or German or French or Spanish; and sufficient electives to make a total of 15 units.

This Group is offered for students who wish to fit themselves for dealing with the sanitary problems of the modern city, from the engineer's viewpoint. The course of study for the first three years is identical with that of Group VII.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose	I	3	I	3	61
or Latin: Livy, Horace,	1, 2	3	2, 3	3	65
or French: Grammar, Composition, Modern Prose.	I	3	I	3	67
or Spanish: Elementary Course	I	3	I	3	69
English: English Composition,	A	3	A	3	60
Mathematics: Plane Trigonometry	I	3			84
Mathematics: Advanced Algebra	3	3			84
Mathematics: Plane and Solid Analytic Geometry			4	4	84
Chemistry: General Chemistry	I	3	I	3	81
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	3	86
Physics: Laboratory Physics	2	I	2	I	86
Engineering: Mechanical Drawing	I	I	I	I	90
Military Science: (Optional)	I	I	2	I	101
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Total Semester Hours	20-21		18-19		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	60
Mathematics: Differential and Integral Calculus	6	4	6	4	85
Chemistry: Qualitative Analysis	2	3			82
Physics: General Physics (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	86
Physics: Physical Measurements	4	1	4	2	86
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	90
Engineering: Mechanics	3	3	3	3	90
Engineering: Metallurgy of Steel			4	1	91
Civil Engineering:			27	1	94
Military Science: (Optional)	3	1	4	1	102
Total Semester Hours	19-20		18-19		

Summer Field Surveying.

Civil Engineering 11.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. Credit of two semester hours. (See page 92).

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	71
English Bible: General Introduction	1	1	1	1	69
Philosophy: Psychology	1	2			72
Mathematics: Astronomy	10	1			85
Geology and Mineralogy: Mineralogy	3	2			83
Physics: Electrical Measurements	6	3			87
Engineering: Hydraulics			5	3	91
Engineering: Materials Testing	6	3	6	1	91
Engineering: Elements of Electrical Engineering			7	4	91
Civil Engineering: Mechanics (B)	18	2	19	2	93
Civil Engineering: Surveying (B), Office Work	12	2			92
Civil Engineering: Railroads (A)			16	4	92
Military Science: (Optional)	5	2	6	2	102
Total Semester Hours	18-20		16-18		

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. Credit of two semester hours. (See page 92).

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Economics*: Principles of Economics	1	3	1	3	76
Christian Evidences:	1	2			70
Philosophy: Ethics			5	2	73
English: English Novel and Short Story	3	2	3	2	60
Geology and Mineralogy: Dynamical Geology	1	2			83
Biology: Sanitation and Bacteriology			8	2	81
Chemistry: Water and Sewage	5	2			82
Civil Engineering: Surveying (B), Office Work	14	2			92
Civil Engineering: Structural Design	19	3			93
Civil Engineering: Contracts and Specifications	21	1			93
Civil Engineering: Masonry			22	3	94
Civil Engineering: Highways			23	2	94
Civil Engineering: Water Supply Engineering			24	2	94
Civil Engineering: Sewerage			25	2	94
Civil Engineering: Seminary	26	1	26	1	94
Military Science: (Optional)	7	2	8	2	103
Total Semester Hours	20-22		17-19		

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

GROUP IX.—MECHANICAL ENGINEERING.**Group Adviser:** Professor Wing.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Latin or German or French or Spanish; and sufficient electives to make a total of 15 units.

This Group is designed for students who wish to prepare themselves for work along engineering and manufacturing lines. The Group combines the study of the basic principles of engineering and, to a limited extent, their application to practical problems, with some work in the liberal arts. The instruction is of a broad and fundamental nature, and will be found useful to students who are desirous of fitting themselves for future promotion to executive positions in manufacturing and industrial concerns.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose,					
or Latin, Livy, Horace,	I	3	I	3	61
or French: Grammar, Composition, Modern Prose,	I, 2	3	2, 3	3	65
or Spanish: Elementary Course	I	3	I	3	67
English: English Composition,	I	3	I	3	69
Mathematics: Plane Trigonometry	A	3	A	3	60
Mathematics: Advanced Algebra	I	3			84
Mathematics: Plane and Solid Analytic Geometry	3	3			84
Chemistry: General Chemistry			4	4	84
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	3	81
Physics: Laboratory Physics	I	3	I	3	86
Engineering: Mechanical Drawing	2	I	2	I	86
Military Science: (Optional)	I	I	I	I	90
	I	I	2	I	101
Total Semester Hours	20-21		18-19		

GROUP NINE

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Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	60
Mathematics: Differential and Integral Calculus	6	4	6	4	85
Chemistry: Qualitative Analysis	2	3			82
Physics: General Physics (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	86
Physics: Physical Measurements	4	1	4	1	86
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	90
Engineering: Mechanics	3	3	3	3	90
Engineering: Metallurgy of Steel			4	1	91
Military Science: (Optional)	3	1	4	1	102
Total Semester Hours	19-20		16-17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	71
English Bible: General Introduction	1	1	1	1	69
Philosophy: Psychology	1	2			72
Engineering: Hydraulics			5	3	91
Engineering: Materials Testing	6	3	6	1	91
Engineering: Elements of Electrical Engineering	7	2	7	3	91
Mechanical Engineering: Shop Work	31	2	32	2	95
Mechanical Engineering: Kinematics	33	4			95
Mechanical Engineering: Machine Design (A)			34	3	95
Mechanical Engineering: Heat Power Engineering (A)	36	3	36	3	96
Military Science: (Optional)	5	2	6	2	102
Total Semester Hours	19-21		18-20		

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	I	3	I	3	76
Christian Evidences:	I	2			70
Philosophy: Ethics			5	2	73
English: English Novel and Short Story	3	2	3	2	60
Mechanical Engineering: Machine Design (B)	35	3	35	3	95
Mechanical Engineering: Heat Power Engineering (B)	37	3	37	2	96
Mechanical Engineering: Power Plant Design			38	2	96
Mechanical Engineering: Mechanical Engineering Laboratory	39	I	39	I	96
Civil Engineering: Mechanics (B)	18	2			93
Civil Engineering: Structural Design			19	2	93
Civil Engineering: Surveying (C)	15	I			92
Mechanical Engineering: Seminary			40	I	96
Military Science: (Optional)	7	2	8	2	103
Total Semester Hours	17-19		18-20		

*Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

GROUP X.—ELECTRICAL ENGINEERING.**Group Adviser:** Professor Wing.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Latin or German or French or Spanish; and sufficient electives to make a total of 15 units.

This Group is designed for students who wish to specialize in the study of Applied Electricity. The course of study for this Group for the first three years is identical with that of Group IX. Ample opportunity is given for specialization in the Senior Year.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
German: Composition, Conversation, Modern Prose,	I	3	I	3	61
or Latin, Livy, Horace,	1, 2	3	2, 3	3	65
or French: Grammar, Composition, Modern Prose,	I	3	I	3	67
or Spanish: Elementary Course	I	3	I	3	69
English: English Composition	A	3	A	3	60
Mathematics: Plane Trigonometry	I	3	I	I	84
Mathematics: Advanced Algebra	3	3			84
Mathematics: Plane and Solid Analytic Geometry			4	4	84
Chemistry: General Chemistry	I	3	I	3	81
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	3	86
Physics: Laboratory Physics	2	I	2	I	86
Engineering: Mechanical Drawing	I	I	I	I	90
Military Science: (Optional)	I	I	2	I	101
<hr/>					
Total Semester Hours	20-21		18-19		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	60
Mathematics: Differential and Integral Calculus	6	4	6	4	85
Chemistry: Qualitative Analysis	2	3			82
Physics: General Physics (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	86
Physics: Physical Measurements	4	1	4	1	86
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	90
Engineering: Mechanics	3	3	3	3	90
Engineering: Metallurgy of Steel			4	1	91
Military Science: (Optional)	3	1	4	1	102
Total Semester Hours	19-20		16-17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	71
English Bible: General Introduction	1	1	1	1	69
Philosophy: Psychology	1	2			72
Engineering: Hydraulics			5	3	91
Engineering: Materials Testing	6	3	6	1	91
Engineering: Elements of Electrical Engineering	7	2	7	3	91
Mechanical Engineering: Shop Work	31	2	32	2	95
Mechanical Engineering: Kinematics	33	4			95
Mechanical Engineering: Machine Design (A)			34	3	95
Mechanical Engineering: Heat Power Engineering (A)	36	3	36	3	96
Military Science: (Optional)	5	2	6	2	102
Total Semester Hours	19-21		18-20		

GROUP TEN

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Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Economics* : Principles of Economics	1	3	1	3	76
Christian Evidences :	1	2			70
Philosophy : Ethics			5	2	73
English : English Novel and Short Story	3	2	3	2	60
Mechanical Engineering : Mechanical Engineering Laboratory	39	1	39	1	96
Electrical Engineering : Theory of Electrical Machinery	45	5	45	2	97
Electrical Engineering : Characteristics of Electrical Machinery	46	1	46	3	97
Electrical Engineering : Electrical Laboratory	47	2	47	2	97
Mechanical Engineering : Heat Power Engineering (B)	37	3			96
Electrical Engineering : Seminary			48	1	97
Military Science : (Optional)	7	2	8	2	103
Total Semester Hours	19-21		16-18		

*Or other courses in economics aggregating six semester hours selected with the approval of the Department of Economics.

COURSES OF INSTRUCTION

ENGLISH.

Professor Hagen and Mr. Burdick.

A. English Composition.—This course consists of practice in writing exposition, argument, description, and narration, in long and short themes, and in letters; with the parallel study of specimens, and of the principles of rhetoric as they apply to writing. Lectures, recitations, written exercises in the class-room and outside, and personal conferences.

Required course for all Freshmen. Three periods thruout the year. Credit of six semester hours.

1. English and American Literature.—This course consists of a survey of English Literature from "Beowulf" to Kipling, and of the chief American writers; lectures, collateral reading, and written reports.

Required course for all Sophomores. Two periods thruout the year. Credit of four semester hours.

2. Shakespeare.—This course embraces the careful study of half a dozen of the plays, with the more rapid reading of others, selected and arranged so as to give the student an insight into the development of Shakespeare's mind and art.

Required course for all Juniors in Groups I-VI. Two periods thruout the year. Credit of four semester hours.

3. English Novel and Short Story.—First two-thirds of the year, a survey of the growth of the novel in structure and content; last third of the year, a study of the principles and structure of the short story. Lectures, collateral reading of representative novels and short stories, class discussions, weekly reports, and personal conferences.

Required course for Juniors in Groups II and VI, and all Seniors in Groups VII-X; open to all other Juniors as an elective course. Two periods thruout the year. Credit of four semester hours.

4. Anglo Saxon.—An introductory course including the study of the elementary principles of the grammar and the reading of representative selections from Anglo-Saxon literature.

Elective for Juniors and Seniors. May be substituted by Juniors and Seniors in Groups II and VI for Course 3. Two periods thruout the year. Credit of four semester hours. (Omitted 1917-1918.)

5. Public Speaking and Oral Reading.—This course consists of practice in prepared and extempore speaking, in oral reading of prose and poetry, and in general platform work.

Elective course open to all qualified students. Two periods thruout the year. Credit of four semester hours.

6. Argumentation and Debating.—A study of the substance and the forms of argumentative discourse, written and spoken; involving the principles of inductive and deductive logic, of sound and fallacious reasoning, of evidence, of the selection and use of materials, and of the best forensic and platform practice.

Elective course open to members of class and college debating teams; and to qualified Juniors and Seniors. Two periods thruout the year. Credit of four semester hours.

GERMAN.

Professor Grimm and Dr. Bohm.

German A.—An elementary course. For students with no preliminary training in German, but with several years' work in other languages. It includes the study of grammar, practice in writing and speaking German, translation of prose and poetry, and the memorizing of simple poems.

Three periods thruout the year. Credit of six semester hours.

German B.—A course for beginners similar to German A, but especially designed for students in Group I. For such students it completes the requirements in German for the degree of Bachelor of Arts. They are, however, advised to take also German 1 or German 2.

Three periods thruout the year. Credit of six semester hours.

German 1.—For students who have presented German for admission; also for those who have completed German A. It may likewise be taken by students who have passed in German B. This course comprises a brief review of grammar, a careful study of syntax combined with oral and

written prose composition, exercises in conversation, and readings, both with previous preparation and at sight, from standard writers of modern German prose. Some time is also given to the reciting of ballads and lyrics. Outside reading may be assigned.

Three periods thruout the year. Credit of six semester hours.

German 2.—For students who have passed in German 1; also open to those students who have attained a grade of not less than C in German B. This course is devoted to the study of selections from classical authors, chiefly from Lessing, Goethe, and Schiller. Private reading is required.

Three periods thruout the year. Credit of six semester hours.

German 3.—For candidates for the degree of Bachelor of Science, also open to others who have completed German 1. This course consists of the cursory reading in class of German essays of a general scientific character, together with private assignments on some special subject in Science.

Two or three periods thruout the year. Credit of four or six semester hours.

German 4.—For those students who have chosen German as their principal subject in Group II; open also to others who satisfy the instructor of their fitness to take it. The work of this course includes the study of the main epochs of the German language and literature, on the basis of readings from representative poets and masters of German style.

Two or three periods thruout the year. Credit of four or six semester hours.

German 5.—An elective course on German literature in the period of the Reformation, with special reference to Luther and the church hymns. Open to advanced students in German.

Hours arranged to suit the convenience of instructor and students.

German 6.—An elective course devoted to the discussion of grammatical topics, advanced composition, and the critical reading of selected texts. Special attention is given to the needs of those students who wish to teach German in the public or secondary schools.

Hours arranged to suit the convenience of instructor and students.

German 7.—A course aiming to widen the student's vocabulary of modern German by means of extracts from newspapers, periodicals, and other suitable reading. It also presents

to the student a general view of the German land and people. Attention is given to the needs of those looking forward to a business career. As far as practicable, the course will be conducted in German.

Hours to be arranged.

Deutscher Verein.—Opportunity for more extended German conversation and discussions referring to German life, literature, and culture may be offered to advanced students in a voluntary German Club, meeting fortnightly from November to April inclusive.

GREEK.

Professor Billheimer.

Preparatory Greek.

A. First Year Greek.—An elementary course for students who have not presented Greek for admission. The course will cover White's "First Greek Book."

Three periods thruout the year. Credit of six semester hours.

B. Second Year Greek.—A course for those who have taken First Year Greek. Cebes' "Tablet" and Books I-IV of Xenophon's "Anabasis" will be read.

Three periods thruout the year. Credit of six semester hours.

College Greek.

1. Xenophon.—Selections from Books I-IV of the "Hellenica," with a thoro review of forms and the essentials of grammar. Greek Prose Composition.

Freshman course. Three periods, first semester. Credit of three semester hours.

2. Lysias.—Selected Orations, special attention being given to syntax. Greek Prose Composition.

Freshman course. Three periods, second semester. Credit of three semester hours.

3. Plato.—"Apology," and "Crito." Interpretation of the text and advanced work in syntax.

Sophomore course. Three periods, first semester. Credit of three semester hours.

4. Homer.—Books IX-XIII of the "Odyssey." Attention will be given to the meter, to Ionic forms, and to the special features of syntax.

Sophomore course. Three periods, second semester. Credit of three semester hours.

5. Euripides.—This course will give a practical introduction to Greek metrics, and will include the history of Greek Tragedy and of the Greek Theatre. (Given in 1917-1918,) *Junior and Senior course. Two periods, first semester. Credit of two semester hours.*

6. Greek History.—A survey of the history of Greece from the earliest times to the death of Alexander the Great. The study of the history of this period will be accompanied by an examination of the early archaeological remains and by the reading of selections from the literary and epigraphical sources. Reports on special subjects will be made by members of the class. (Given in 1917-1918.)

Junior and Senior course. Two periods, second semester. Credit of two semester hours.

7. Demosthenes.—The "First Philippic" and the "Olynthiacs." Oxford text. The students prepare grammatical and historical notes for each oration. (To be given in 1918-1919.)

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

8. New Testament Study.—This course embraces a study of New Testament Greek. Some book of the New Testament is read in the original. The study of Biblical Greek has its approach from the classic side, but special attention is given to the distinctive peculiarities of Hellenistic Greek as a later and less artificial dialect of the elaborate and polished language of orators and philosophers. The student is familiarized with the vocabulary of the New Testament. Etymology and syntax are systematically studied. (To be given in 1918-1919.)

Junior and Senior course. Two periods, second semester. Credit of two semester hours.

Special Arrangement for Beginning Greek in College.

To provide for applicants for Group I who cannot offer the entrance requirements in Greek, but can offer three entrance units in Modern Languages instead, provision is made for beginning Greek in College. Such students take Preparatory Greek Courses A and B during Freshman and Sophomore years, and receive College credit for same. During Junior and Senior years they have Greek 1, 2, 3, 4.

A student who is a regular member of Group II will be allowed to elect courses in Greek, including Courses A and B, after the Sophomore year, and will be given College credit for them.

LATIN.

Professor Biklé.

Allen and Greenough's "Latin Grammar" and Harper's "Latin Lexicon" are recommended. Of the smaller dictionaries the student is advised to get the "Elementary Latin Dictionary," by Charlton T. Lewis.

1. **Livy.**—Selections from Book I, and the Hannibalian War in Books XXI and XXII. Special attention is given the syntax and Livy's peculiarities of style. Collateral reading on the Punic Wars, and lectures on Rome and Carthage.

Freshman course. Three periods during the first semester up to the Christmas vacation. Credit of two semester hours.

2. **Horace.**—Selections from the "Odes," including a critical interpretation with special attention to the Horatian meters and the mythological and historical allusions of the text. Berens' "Hand-Book of Mythology" is recommended. Collateral reading on Horace as a lyric poet.

Freshman course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

3. **Cicero.**—The "De Senectute" will be read, with thorough drill in syntax, special attention being given to the mode uses of the Latin Subjunctive.

Freshman course. Three periods from the last of March to the close of the academic year. Credit of two semester hours.

Note. During part of the Freshman year there will be, in connection with the reading of the Latin text, drill in Latin Prose Composition, embracing a rapid review of Latin syntax, with oral and written practice in the principles involved.

4. **Cicero.**—The "De Amicitia" or the "De Natura Deorum." Rigid drill in syntax will be continued, with training in reading the Latin text with expression. Collateral reading of the life and times of Cicero. Informal lectures on Cicero's philosophical views.

Sophomore course. Three periods a week during the first semester up to the Christmas vacation. Credit of two semester hours.

5. **Horace.**—"Satires," and the "De Arte Poetica." After the study of some selected satires the "Ars Poetica" is read, and each student is required to prepare a written analysis of the poem. There is a review of the dactylic hexameter versification.

Sophomore course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

6. **Tacitus.**—The “Agricola”, or selections from the “Annals.” Along with the translation of the text there will be a study of the times in relation to the literature of this period, and special attention will be given to the characteristics of the Silver Age Latinity.

Sophomore course. Three periods from the last of March to the close of the year. Credit of two semester hours.

7. **Quintilian.**—Tenth Book of the “Institutes.” The student is required to make a close study of the terms used by Quintilian in literary criticism, and to make a summary and classification of the Greek and Roman authors.

Junior course. Two periods during the first semester to the Christmas vacation. With course 8, credit of four semester hours.

8. **Juvenal.**—Selected Satires. With full explanations of the text and collateral reading on the private and social life of the Romans of the Empire. Followed by a short course in Roman Antiquities.

Junior course. Two periods from the beginning of January to the close of the college year. With course 7, credit of four semester hours.

9. **Terence or Plautus.**—The “Andria” of Terence or the “Captivi” of Plautus. The dramatis personae are assigned to special members of the class and the parts are rendered both in Latin and English. Informal lectures on the Roman theatre; also on the origin and development of the Latin drama, and the value of the Roman comedy to the philologist and the student of Roman life.

Senior course. Two periods for ten weeks. With courses 10 or 11, and 12 or 13, credit of four semester hours.

10. **Latin Literature.**—A course of lectures embracing a general survey of the whole field, and aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, with special attention to the writers of the Golden and Silver Ages. Or, —

11. **Roman History.**—A course of lectures covering the period from 150 B. C. to 100 A. D.

Senior course. Two periods for eight weeks. With courses 9 and 12, credit of four semester hours.

- 12. Roman Law.**—Morey's "Outlines" is the chief text-book. After a careful study of the historical development and content of Roman Law, a paper is required from each member of the class on a subject assigned for special investigation. Or, —
- 13. Roman Constitutional History.**—The subject is pursued with the aid of a text-book.
Senior course. Two periods for seventeen weeks. With courses 9 and 10, or 11, credit of four semester hours.

FRENCH.

Professor Barney and Dr. Bohm.

French A.—An elementary course for students who have not offered French for admission. For students in Group I, it satisfies the requirements in French for the baccalaureate degree.* This course includes careful drill in pronunciation, the study of the essentials of grammar with constant practice in turning English into French, and the translation of a suitable French reader.

Three periods thruout the year. Credit of six semester hours.

French 1.—An intermediate course for students who have offered French for admission, also open to those who have passed creditably in French A. This course comprises the study of grammatical principles, composition, exercises in pronunciation, dictation, and readings from standard writers of modern prose. Outside reading may be assigned.

Three periods thruout the year. Credit of six semester hours.

French 2.—Advanced course in Nineteenth Century Literature. Open to all students who have completed with credit French 1 or equivalent work. The first semester will be devoted to Victor Hugo and the Romantic School. In the second semester the Realistic and Naturalistic Movements will be studied thru some of their representative works. Opportunity will also be given to hear and speak French. Private reading is required. This course is intended to alternate with French 3.

*Three periods thruout the year. Credit of six semester hours.
(Omitted 1918-1919.)*

French 3.—Advanced Course. Open to all students who have completed with credit French 1, or who have done equivalent work. This course is devoted to the study of French

*Students who have the ministry in view may substitute German 1 or 2

classics, with special reference to Corneille, Racine, Molière. Some time is also given, during the second semester, to more difficult representative prose. Private reading is required.

*Three periods thruout the year. Credit of six semester hours.
(Offered 1918-1919)*

French 4.—Scientific French. This course consists of the reading of texts and magazine articles dealing with scientific subjects. Subjects for outside reading, dealing with branches of science in which the students expect to specialize, will be assigned.

Hours and credits to be arranged.

French 5.—Course in modern French phonetics and review of important grammatical principles, with some consideration of methods of teaching. Intended for prospective teachers and any who wish a thoro drill in essentials.

Hours to be arranged. Credit of six semester hours.

French 6.—Elementary course in Spoken French for those who have had little or no French. Drill in the ordinary vocabulary of conversation, with some attention to military terms during the progress of the war. Grammatical points are discussed briefly as the course makes necessary.

Two periods thruout the year. Credit of two semester hours.

French 7.—Advanced conversational course for those who have mastered elementary details of grammar and vocabulary. The course consists almost entirely of conversation on selected subjects, with at present some attention to military terminology.

Two periods thruout the year. Credit of four semester hours.

ITALIAN.

Professor Barney.

Italian 1.—Elementary course. This course aims to give the student thoro training in the rudiments of the Italian language and to enable him to read ordinary Italian with ease and accuracy. Course requirements in French, if any, must be satisfied, before taking this course.

*Three periods thruout the year. Credit of six semester hours.
(Offered 1918-1919).*

Italian 2.—Advanced course. This course consists of a review of grammar together with readings from more difficult modern prose and poetic works.

Two periods thruout the year. Credit of four semester hours.

SPANISH.

Professor Barney.

Spanish 1.—Elementary course. This course is intended for those who desire a knowledge of the essentials of the Spanish language, either for literary work or for a business career. Course requirements in French, if any, must be satisfied before taking this course.

Three periods thruout the year. Credit of six semester hours.

Spanish 2.—Advanced course. This course consists of a review of grammar together with advanced composition. Selections from more difficult modern prose and poetic works, as well as from the classics, including Cervantes, will be read.

Three periods thruout the year. Credit of six semester hours.

COMPARATIVE PHILOLOGY.

Professor Grimm.

1. Linguistic Science.—A course open to advanced students, dealing with the principles of Linguistic Science.

One period thruout the year. Credit of two semester hours.

2. Sanskrit.—Beginners' course in Sanskrit. Open to advanced students. This course includes the study of grammar and the interpretation of an easy text from Lanman's Reader.

Two periods thruout the year. Credit of four semester hours.

ENGLISH BIBLE.

Professor Valentine.

1. General Introduction to the English Bible.—This course aims to bring to the student a sympathetic knowledge of the life and thought of the Hebrews as the nation which has vitally influenced our own religious thought. The Bible is the source-book for this knowledge, and the object is to acquaint the student with it as the record of the advance and culmination of the highest religious consciousness of the human race. The progress of the revelation presented in the Scriptures is followed in its historical developments from the origins of the Hebrew people to the close of the Apostolic Age. In explaining the difference between the Hebrews and their neighbors the reasons are found not in their peculiar environment or exclusive racial characteristics, but, as the records themselves explain it, in terms of divine planning and a pro-

gressive human responsiveness. The message of the biblical writers is studied in its historical context so that its original significance may be understood as well as its meaning for the present.

Freshman course. One period thruout the year. Credit of two semester hours.

- 2. Literary Study of the Bible.**—The Bible is studied as a body of English literature, and the sacred writings are subjected to a morphological analysis. The study of the literary forms is entirely independent of the historical investigation. The distinctive types of literary structure in the Bible as presented by Moulton in his "Modern Reader's Bible" are studied in detail and their permanent literary value is noted. The underlying principle of this study is that a thoro understanding of the outer literary form is an essential guide to an appreciation of the inner matter and spirit.

Sophomore course. One period thruout the year. Credit of two semester hours.

- 3. New Testament Study.**—See Greek 8.

CHRISTIAN EVIDENCES.

Professor Valentine.

- 1.** A constructive study of the evidences of the presence and action in the world of a supernatural redemptive power operating thru the Gospel, as these appear in the first Christian documents, in Christian history, and Christian experience, with the special aim of dealing with the perplexing questions which the mind encounters in the effort to intellectualize the content of the Christian revelation and state it in terms of modern knowledge and thought. The characteristic features of Christianity, the superhuman character of Christ, His unparalleled teachings, and His supernatural works as the normal expression of His supernatural person, are dwelt upon. The historicity of the documents that bear witness to Him, His unshared pre-eminence as a creative force in the world, and the impossibility of accounting for the distinctive Christian phenomena by a process of natural evolution are emphasized. The inductive method is followed. The Christian conclusion is shown to be the logical outcome of a study of the unique facts.

Junior course. Two periods, first semester. Credit of two semester hours.

HISTORY.

Professor Valentine.

1. **Political History of Modern Europe.**—The present conditions of Europe are explicable only in the light of preceding events. To understand them they must not only be examined; they must be related to their antecedents. The ages are bound together, and no point within the historical period can be taken as an absolute beginning. But a new era was inaugurated by the political and industrial revolutions of the eighteenth century. With these as background the progress of the subsequent development is studied, with the special view of enabling the student to understand contemporary events and movements by thus connecting them with their proximate origins. As the development has been conspicuously social as well as political, social and political history are combined in one synthesis, and political and economic conditions are exhibited in their mutual reactions.

Freshman course. Two periods thruout the year. Credit of four semester hours.

2. **English History.**—After a rapid introductory survey of the Anglo-Saxon period, the course begins with the Norman conquest and deals with the details of historical development down to the present time. Stress is laid upon such phases of English history as will specially aid the student to understand the modern political developments in the Anglo-Saxon world.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Alternates with Course 4. Given 1917-1918 and alternate years.

Prerequisite, Course 1.

3. **United States History.**—This course comprises a study of our national history. An effort is made to discern the social and economic forces that have been operative in the development of the republic, and thus lead to an understanding of the national problems of the present.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Alternates with Course 5. Given in 1917-1918 and alternate years.

Prerequisite, Course 1.

- 4.* The German Empire and Its Present Organization.**—The study begins with the rise of the Prussian monarchy, and traces the conditions prevailing in the Germanies during the seventeenth, eighteenth and nineteenth centuries, and the movements that resulted in the unification of Germany. It concludes with a detailed study of the present organization of the Empire and an examination of the political, social, and economic conditions of the present day.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Alternates with Course 2. Given in 1918-1919 and alternate years.

Prerequisite, Course 1.

- 5. Era of the Reformation.**—Like all movements that have powerfully influenced the subsequent course of history, the Reformation was due to long-working antecedent causes. The aim is to analyze the causes, trace the various lines of preparation, and note the great personalities that embodied these preparations in their own experience; and further to show the relation of the struggle then waged for religious freedom, the rights of conscience, and liberty of thought to the religious, political, social and economic changes that differentiate the modern from the medieval world.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Alternates with Course 3. Given in 1918-1919 and alternate years.

Prerequisite, Course 1.

PHILOSOPHY.

Professor Sanders and Mr. Rechard.

- 1. Psychology.**—A course in general psychology which aims to acquaint the student with the phenomena of mind, the methods of psychological investigation, and the practical bearing of the various mental functions on the problems of ethics, pedagogy, etc.

Sophomore course. Two periods, first semester. Credit of two semester hours.

✕*The particular phases of historical study in Courses 4-5 are subject to change, from time to time, to provide opportunity for the investigation, if it should be deemed timely or advisable, of other periods or events.

- 2. Introduction to Philosophy.**—The course in general psychology suggests the problems of philosophy. The course in Introduction aims to acquaint the student with the content of philosophy, the origin and development of the various problems, the aim and method of philosophy, the results which have been attained, and its relation to the other departments of human thought.

Sophomore course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

- 3. Logic.**—An introductory course in the laws of thought. The evolution of the concept, its development into judgment and inference, the systematic function of classification, the explanatory function of generalization, and the methodology of proof and investigation are studied with a view to securing a foundation for the theory of knowledge and effective scientific method.

Junior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 4. Sociology.**—A study of the nature of society and its problems. Starting with the psychological factors of sociation, the development of social institutions, the economic and cultural factors of social progress, and the elimination of hindrances, evils are taken up in turn with a view to an understanding of the methods of social improvement.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 5. Ethics.**—A study of human conduct. The concept of personality and the idea of self-realization, as forming the background of moral judgment, are wrought into a system which explains the origin of the moral motives as well as their implication of God and immortality.

Junior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

- 6. History of Philosophy.**

A. Ancient and Medieval Period.—This course traces the rise and progress of reflective thought as it appears among the Greeks and culminates in Scholasticism. Special stress

is placed upon the Greek thinkers, with a view to acquiring an understanding of the spirit of philosophy.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

B. Modern Period.—This course covers the period from the Renaissance to the present time. Special stress is placed upon the great systems. The student is required to read selections from the great thinkers and report on them, the constant aim being to cultivate the philosophizing attitude, thus furnishing a basis for independent thought as well as an inspiration to do original thinking.

Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, 3, and 6 A.

7. Philosophy of Religion.—A study of religion as a distinct factor in human development. The aim of the course is to show the nature of religion and to interpret the various forms in which it manifests itself.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

8. Metaphysics.—Beginning with the method of system building, the student is introduced to the meaning of a world-view, the factors which a comprehensive and consistent view must recognize, and the reasons for regarding Theism as the theory which best meets existing requirements.

Senior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, 3, 5, and 6.

9. Advanced Logic.—A study of epistemology investigating the principles of science with a view to understanding their origin, their validity, and their philosophical implications.

Senior course. Two periods, first semester. Credit of two semester hours. (Omitted 1917-1918.)

Prerequisite, Courses 1, 2, and 3.

10. Advanced Psychology.—A study of the problems and methods in modern psychology. The course is adapted to those who intend pursuing advanced studies in the mental sciences. Individual research work is required.

Senior course. Two periods, first semester. Credit of two semester hours (Omitted 1917-1918).

EDUCATION.

Professor Sanders.

- 1. History of Education.**—A study of the most important movements in the history of education and of the factors and personages instrumental in bringing about the various steps in the long line of progress.
Three periods, first semester. Credit of three semester hours.
Prerequisite, Philosophy 1 and 2.
- 2. Philosophy of Education.**—This course is an elaboration of the answer to the age old question "What is it to educate?" It is a systematic treatment of the aim of education, what determines the aim, the content-material and the principles governing the realization of this aim.
Three periods, second semester. Credit of three semester hours.
Alternates with Course 4. Given 1917-1918 and alternate years.
Prerequisite, Philosophy 1, 2, and 3, and Education 1.
- 3. School Organization and Method of Teaching.**—A study of the practical problems of organization and the application of principles.
Two periods, first semester. Credit of two semester hours.
Prerequisite, Philosophy 1, 2, and 3.
- 4. Secondary Education.**—A study of the principles and problems of the secondary school. The course is intended for those who are looking forward to High School and Superintendency positions.
Three periods, second semester. Credit of three semester hours.
Alternates with Course 2. Given 1916-1917 and alternate years.
Prerequisite, Courses, Philosophy 1, 2, and 3, and Education 1.
- 5. Educational Psychology.**—This course deals with the psychology of learning, methods of mental measurement, memory and intelligence tests, treatment of precocity and deficiency, &c.
Two periods, second semester. Credit of two semester hours.
Prerequisite, Philosophy 1 and 3.

- 6. The High School.**—This course is a continuation of Course 3, differing from it in concentrating attention on the problems of organization and method of teaching in the High School.

Two periods, second semester. Credit of two semester hours.

Prerequisite, Philosophy 1, 2, and 3.

Note. The Pennsylvania School Code requires of all teachers who desire the State certificate courses 1, 3, and 5, in Philosophy, and at least six semester hours in Education. Some of the neighboring States require more.

ECONOMICS.

Professor Ashworth and Mr. Bennett.

- 1. Principles of Economics.**—After a brief study of the economic history of England and the United States attention is centered on fundamental economic laws and principles and their application to modern economic problems such as the tariff, corporations, transportation, labor problems, and the currency.

Sophomore course for students in Groups III and VI. Junior and Senior course for other students. Three periods thruout the year. Credit of six semester hours.

Prerequisite for all other courses in Economics unless permission is otherwise given by Professor of Economics.

- 2. Money and Banking.**—An examination of the theories of money and credit with a history of the monetary and banking systems of the United States. A study is also made of European and Canadian Banking Systems.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given in 1918-1919 and alternate years.

- 3. Public Finance.**—A study of the principles of public finance with special reference to the United States. The various tax systems, government debt, and government expenditure are considered.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1917-1918 and alternate years.

- 4. Sociology.**—See Philosophy 4.

- 5. Business Law.**—This course is designed to give the student a knowledge of the legal rights and obligations arising out of common business transactions. The fundamental laws pertaining to contracts, partnerships, corporations, negotiable instruments, sales, etc., are examined.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1918-1919 and alternate years.

6. Accounting.

- A. Elementary Accounting.**—This course deals with the methods of accounting in the various kinds of business and for the different types of organizations; the handling of single and double entry; the relations of bookkeeping to accounting; and other fundamental features of the subject.

Sophomore course. One lecture and three hours of laboratory work per week thruout the year. Credit of six semester hours.

Prerequisite for Accounting B.

- B. Advanced Accounting.**—This course deals with some of the more advanced phases of accounting, such as depreciation, the reserve, goodwill, deficiency accounts, realization and liquidation, cost accounting and auditing.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1917-1918 and alternate years.

- 7. Labor Problems.**—A study of the relation of the employee to the employer, including such subjects as child and woman labor, the sweating system, poverty, unemployment, immigration, industrial conciliation and arbitration, employer's liability laws, industrial insurance, profit sharing and co-operation. The work of labor unions in relation to labor problems is emphasized.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1917-1918 and alternate years.

- 8. Business Organization.**—A study of the various types of business organization, their characteristics and history. Public policy with reference to corporations—especially transportation corporations—receives special attention.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1917-1918 and alternate years.

POLITICAL SCIENCE.

Professor Ashworth.

- 1. Comparative Government.**—Attention is first given to the background of the Federal and State constitutions. The formation, adoption and growth of the American Constitution is emphasized. A comparison of the government of the United States with the leading European governments is made.

Sophomore course for students in Groups III and VI. Sophomore Junior and Senior course for other students. Three periods, first semester. Credit of three semester hours.

Prerequisite for other courses in Political Science.

- 2. Political Parties.**—A study of the origin, history and platforms of the leading national parties with a consideration of such questions as the methods of nominating candidates, the conducting of campaigns, civil service reforms and election laws.

Sophomore course for students in Groups III and VI. Sophomore Junior and Senior course for other students. Three hours, second semester. Credit of three semester hours.

- 3. International Law.**—The development of the rules of international law, the rights and obligations of nations in times of war and of peace, the settlement of international disputes are considered.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1918-1919 and alternate years.

- 4. Constitutional Law.**—A study of the American Constitution viewed in the light of the Supreme Court decisions. This course is given for those who wish to make an extended study of the basic principles of United States Government.

Junior and Senior course. Three hours, second semester. Credit of three semester hours. Given 1918-1919 and alternate years.

BIOLOGY AND HYGIENE.

Professor Stahley and Mr. Croll.

Courses 1 to 7 are required studies in Group V. Course 8 is required of students in Municipal Engineering. All the courses are open as electives to those qualified to take them. The special

pre-medical courses are 1, 2, and 3, required by the Pennsylvania State law. They are also valuable for general culture and as a preparation for teaching in secondary schools.

The work in all courses is carried on by lectures, demonstrations, dissections, drawings, daily quizzes, and stated examinations.

1. **General Biology.**—This course acquaints the student with microscopic technique and general laboratory methods, while he studies selected types of plants and animals, taken from the lower forms of life. The purpose is to ascertain fundamental facts of structure and life processes, with the significant relationships in the two great kingdoms of organic nature.

Junior course. Three periods for twelve weeks. Two hours of lectures, and six hours of laboratory work. Credit of four semester hours.

2. **Vertebrate Zoölogy.**—The essential features of their variations, in the vertebrate type of animals, are carefully considered, while representative forms are being dissected, beginning with the highest class, the Mammalia, and passing down to the lowest Chordates. Questions relating to comparative morphology and physiology of Vertebrates are freely discussed.

Junior course. Three periods for fifteen weeks. Two hours lectures, and six hours of laboratory work. Credit of four semester hours.

3. **Invertebrate Zoölogy.**—Selected types of Invertebrates are dissected. The basic structural scheme which obtains in the various groups, their adaptations to environmental conditions, and their economic value, are among the subjects which claim attention. The bearing of the theory of evolution in animal development is discussed during the year.

Junior course. Three periods for eight weeks. Two hours of lectures, and six hours of laboratory work. Credit of four semester hours.

4. **Human Anatomy and Physiology.**—Special attention is given to osteology, joints, ligaments, and muscles. Tramond's preparations, consisting of real bony joints, with accurately placed artificial ligaments, and Azou's dissectible

manikin, provide ample facilities for this part of the work. In this, as in all the branches of the course, physiological processes are constantly discussed.

Senior course. Three periods for seventeen weeks. Two hours of lectures, and six hours of laboratory work. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

- 5. Mammalian Histology.**—With the aid of prepared microscopic slides, the pupil studies the minute anatomy of the different tissues of the body. He also learns practically how to fix, harden, imbed, section, stain, and mount the important tissues.

Senior course. Three periods for twelve weeks. Two hours of lectures and six hours of laboratory work. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 6. Embryology.**—The principles of the maturation and fertilization of the germ elements are considered. The development of the chick is studied. Entire mounts are made, as well as mounts of serial sections of the incubating egg, from the first hour of incubation to the fifth day, when the organs are practically all formed.

Senior course. Three periods a week for six weeks. Two hours of lectures, and six hours of laboratory work. Credit of one semester hour.

Prerequisite, Courses 1, 2, and 3.

- 7. Botany.**—This course is in great part confined to the Spermaphyta, and continues the study of plants as begun in the General Biology course, where type forms from the Thallophytes, Bryophytes and Pteradophytes were considered. Morphology, physiology and ecology are among the topics mostly emphasized. The study includes lectures, recitations, practical laboratory work and field excursions. Considerable attention is paid to plant analysis in the spring months.

Junior course. Two periods thruout the year. One hour recitation and two hours of laboratory work. Credit of four semester hours.

- 8. Sanitation and Bacteriology.**—This is a course in municipal sanitation. The lecture part of the work is comprised in Course 9, second semester. The bacteriology of water analysis is pursued in a well-equipped laboratory.

Senior year. Laboratory, three periods for six weeks, one semester hour. Lectures, one semester hour. Total credit: two semester hours.

- 9. Personal and Public Hygiene (Sanitary Science).**—During the first semester are discussed the questions of the waste and conservation of individual vitality in their application to efficient citizenship. During the second semester consideration is given to those essential principles of public hygiene which are necessary in protecting the health of communities.

Lectures, one hour weekly thruout the Senior year. Credit of two semester hours.

- 10. Physical Culture.**—This end is sought under medical guidance in the Gymnasium during the winter months. A physical examination of each student is made when he enters college, and such kinds of gymnastic exercises are prescribed as seem desirable. The purpose is to encourage the promotion of health and physical vigor as necessary for successful mental application. A complete course of health lectures is annually given to the entering class.

Two weekly drills are required of all Freshmen from December 1 to March 15. Credits are allowed for attendance and attention.

CHEMISTRY.

Professors Breidenbaugh and Stover, Mr. Dickson and Assistants.

The courses in chemistry are not designed to prepare specialists in any department of the subject, but to give a general training in the science. The successful completion of these courses will prepare the student to enter on graduate or professional studies in any leading university, or qualify him for a more successful pursuit of any technical business, or fit him to teach chemistry in secondary schools.

The instructors are in daily attendance during the college term from 8 to 12 and from 1 to 4, except on Saturday afternoons.

- 1. General Chemistry.**—No previous acquaintance with the subject is required. Those offering chemistry for admission

will be allowed to substitute, as far as is best for the individual, from Course 2. The general principles and the fundamental laws of the science are included in the course, which consists of lectures, readings from approved text-books—such as Remsen's "College Chemistry," Newell's "Inorganic Chemistry for Colleges," Kahlenberg's "Outlines of Chemistry"—and laboratory work of which careful record in note-books is required. There are daily quizzes and frequent examinations. The last several weeks of the course are devoted to a practical review and examination in the determination of a certain number of substances, based on the results of previous study.

*Three lectures and six laboratory hours weekly for one year.
Credit of six semester hours.*

- 2. Qualitative Analysis.**—The student, following an outline prepared for the purpose, becomes acquainted with the general reactions of the elements of the several groups and from these data constructs the scheme of analysis which is applied in a number of determinations. There is constant supervision and personal conference over the work. Reference book, Fresenius' "Qualitative Analysis."

*One lecture and nine laboratory hours weekly for one year.
Credit of six semester hours.*

Prerequisite, 1.

- 3. Quantitative Analysis.**—While such lectures as are desirable are given, this is essentially a personal laboratory course. An assigned minimum of work is required. Reference book, Fresenius' "Quantitative Analysis."

Nine hours of laboratory work weekly for one year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 4. Organic Chemistry.**—Lectures and laboratory work. The laboratory work is partly preparations and partly the approximate analysis of animal and plant substance.

A. Three lectures weekly during the first semester. Credit of three semester hours.

B. Group IV. Eighteen laboratory hours weekly during the first semester. Credit of six semester hours.

C. Group V. Nine laboratory hours weekly during the year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 5. Water and Sewage.**—Lectures, reading, and laboratory work on the character of water supplies and sewage products and their purification.

Two periods for one semester arranged to suit the class. Credit of two semester hours.

Prerequisite 1 and 2.

- 6. Cements.**—Reading and laboratory work on the nature of cements.

Two periods for one semester, arranged to suit the class. Credit of two semester hours.

Prerequisite, 1, 2, and 3.

- 7. Special Quantitative Methods.**—Students who are qualified are offered courses in advanced and applied analysis—such as mineral and ore analysis, the examination of food stuffs, etc.

Such hours as may be arranged for during Senior year, or during Junior year by such students as have completed other work in the department. Credit of six to ten semester hours.

- 8. Industrial Chemistry.**—A course of class-room exercises.

Three periods, second semester. Credit of three semester hours.

Prerequisite, 1, 2, and 3.

GEOLOGY AND MINERALOGY.

Professor Breidenbaugh.

- 1. Dynamical Geology.**—This course of lectures gives the student an acquaintance with the facts concerning inorganic geology, and a discussion of the dynamical agencies which have been operative in bringing the earth to the condition in which we now find it.

Field work and the preparation of papers from personal observation give practical application to the work. Frequent examinations are held.

Two periods, first semester. Credit of two semester hours.

- 2. Historical Geology.**—A comprehensive discussion of the principles of evolution, with illustrations from historic geology.

The student is assigned readings from the text-books of Dana, Le Conte, Chamberlin and Salisbury, and other authors.

Two periods, second semester. Credit of two semester hours.

- 3. Mineralogy.**—Following a short course of practical work in Crystallography, there is a series of determinations of not less than one hundred minerals by their physical and blowpipe characteristics.

Two periods thruout the year. Credit of four semester hours.

Prerequisite, Chemistry 1.

MATHEMATICS AND ASTRONOMY.

Professor Lamond and Mr. Rechard.

1. **Plane Trigonometry.**—Fundamental definitions, properties and analytical theory of trigonometric functions with the usual formulae; solution of trigonometric equations; theory and use of logarithms; solutions of triangles.

Required of all Freshmen. Three periods during the first semester. Credit of three semester hours.

2. **Solid Geometry.**—The usual text demonstrations, including the relations of planes and lines in space, the properties and mensuration of prisms, pyramids, cylinders, cones, the sphere and spherical triangle.

Required of Freshmen in Groups I-VI. Three periods during the second semester. Credit of three semester hours.

3. **Advanced Algebra.**—Complex numbers, with graphical representation of sums and differences; determinants, including the use of minors and the solution of linear equations; numerical equations of higher degree with so much of the theory of equations as is necessary for their treatment, including Cardan's solution of the cubic and Horner's method.

Required of Freshmen in Groups VII-X, and of Sophomores in Groups IV and V. Elective for Sophomores in Groups I-III, VI. Three periods during the first semester. Credit of three semester hours.

4. **Plane and Solid Analytic Geometry.**—The locus of an equation; the line; the conic sections and other curves, their tangents, normals and areas; transformation of co-ordinates. Cartesian co-ordinates in space; the line; the plane; transformation of co-ordinates in space; the quadric and other surfaces.

Required of Freshmen in Groups VII-X. Four periods during the second semester. Credit of four semester hours.

5. **Elementary Analysis.***—This course is intended primarily for those who do not intend to continue the study of Mathematics, but who wish to obtain some knowledge of the

*Students who intend taking Math. 6 are advised to take Math. 4 instead of Math. 5 in preparation.

fundamental principles of Analytic Geometry and the Calculus.

Required of Sophomores in Groups IV and V. Elective for Sophomores in Groups I-III, VI. Three periods during the second semester. Credit of three semester hours.

- 6. Differential and Integral Calculus.**—Theory of limits; fundamental formulae of differentiation with applications, including maxima and minima and rates; series and the expansion of functions; other applications. The indefinite and definite integral; reduction formulae; applications including areas and volumes.

Required of Sophomores in Groups VII-X. Elective for those who have taken Math. 4 or 5. Four periods thruout the year. Credit of eight semester hours.*

- 7. Differential Equations.**—The theory, together with the principles and devices, which will enable the student to integrate the ordinary or partial differential equations he is likely to encounter.

Elective for those who have taken Math. 6. Three periods during the first semester. Credit of three semester hours.

- 8. Theoretical Mechanics.**—The mathematical treatment of various topics in Mechanics.

Elective for those who have taken Math. 6. Three periods during the second semester. Credit of three semester hours.

- 9. Introduction to Analysis.**—Topics from the Calculus not given in Math. 6, together with an introduction to the Theory of Functions of Real Variables.

Elective for those who have taken Math. 6. Two periods thruout the year. Credit of four semester hours. (Omitted 1918-1919).

- 10. Astronomy.**—A practical course in the determination of meridian, longitude, and time, and including the formulae of Spherical Trigonometry and the solution of spherical triangles.

Required of Juniors in Groups VII and VIII. Two periods for eight weeks, or the equivalent. Hours to be arranged. Credit of one semester hour.

PHYSICS.

Professor Parsons, Mr. Cessna, and Mr. Creager.

- A. Elements of Physics.**—A course covering in an elementary way the general subject of Physics, largely descriptive,

*Students who intend to take Math. 6 are advised to take Math 4, instead of Math 5, in preparation.

and requiring no previous knowledge of the subject. The instruction is given by lectures illustrated by experiment, recitations, problems, and laboratory work. This course is designed for those who can devote no more than one year to Physics, and not for those who will pursue the subject further.

Three lectures and three laboratory hours per week thruout the year. Credit of eight semester hours.

1. **General Physics.**—Mechanics of solids and fluids, properties of matter, sound and heat. The first part of a course in General Physics extending thru two years, required of all students in the Scientific and Engineering Groups, and forming the basis of the more specialized courses. The instruction is given by lectures illustrated by experiments, recitations, and problems assigned for work outside of the class. No previous knowledge of the subject is assumed, but a high school course is advantageous as preparation.

Three hours per week thruout the year. Credit of six semester hours.

2. **General Laboratory Physics.**—A laboratory course in mechanics of solids and fluids, properties of matter, sound and heat, designed to accompany Course 1. (Excepting in special cases the two courses must be taken together.) It is desirable, tho not required, that the student should have had an elementary laboratory course in Physics.

Three or six hours per week thruout the year. Credit of two or four semester hours.

3. **General Physics.**—Electricity and magnetism, and light. A continuation of Course 1, emphasizing particularly electricity and magnetism, and including the fundamentals of photography. Lectures, recitations, and problems.

Three hours per week thruout the year. Credit of six semester hours.

Prerequisite, Physics 1 and Mathematics 3, 4.

4. **Physical Measurements.**—Laboratory experiments in electricity and magnetism, and light. A continuation of Course 2 and designed to accompany Course 3. Some experiments in electrical measurements, diffraction and polarization of light, and photography, are included.

Three to six hours per week thruout the year. Credit of two to four semester hours.

5. **Mechanics.**—A lecture course, based on calculus, treating of statics, dynamics of translation and rotation, moments

of inertia, elasticity, and vibrations, and accompanied by laboratory work in these subjects.

Two lecture hours and three laboratory hours per week, first or second semester. Credit of three semester hours.

Prerequisite, Physics 1, 3, and Mathematics 6.

- 6. Electrical Measurements.**—A lecture and text-book course in the theory of electricity and magnetism, electrical measurements and measuring instruments, accompanied by laboratory work.

Two hours lecture and class work, and three or six laboratory hours, first semester. Credit of three or four semester hours.

Prerequisite, Physics 1-4 Mathematics 6.

- 7. Recent Advances in Physics.**—Radioactivity, discharge of electricity thru gases, the electron theory, and other topics. Lectures illustrated by experiments.

Two lectures per week thruout the year. Credit of two semester hours.

Prerequisite, Physics 1 and 3, and Mathematics 6.

- 8, 9. Mathematical Physics.**—Lecture course in mathematical Physics for graduate students (or other advanced students). The two courses alternate in successive years, forming together a complete course, but the topics treated may vary from year to year. Such subjects as mechanics, hydrodynamics, the kinetic theory of gases, the theory of sound, electricity and magnetism, physical optics, and the electro-magnetic theory, are treated.

Two or three lectures per week thruout the year.

Prerequisite, Physics 1-4, and Mathematics 6, 7.

- 10. Advanced Laboratory Physics.**—This comprises all the advanced laboratory work not included in the preceding courses, and is designed for graduate students and others specializing in Physics. The experiments or problems assigned are variable and may include research on some assigned topic.

The course may be taken thru more than one year, credit being given proportional to the work done.

- 11. Physics Seminary.**—A meeting, for one hour a week thruout the year, of the advanced students, at which papers on assigned topics are presented, current topics are discussed, and reports given of recent work of investigators (obtained from reading the journals).

Credit of two semester hours.

LECTURESHIP ON CONSTITUTIONAL LAW.

Henry Wolf Biklé, Esquire.

Four lectures on the Constitution of the United States; including (a) a discussion of the American Doctrine of Constitutional Law, and (b) a consideration of the commerce clause, (c) of the clause forbidding the impairment by the States of the obligation of contracts, and (d) of the guaranties of personal liberty and equality contained in the Fourteenth Amendment.

LECTURESHIP IN SOCIOLOGY.

Mrs. Mary G. Stuckenberg has founded a Lectureship in Sociology in honor of her late husband, J. H. W. Stuckenberg, D.D., LL.D., by the terms of which the College will have annually a lecture on some phase of Sociology from the standpoint of Christian Ethics by specialists in this important field. The lecture is given at such a time as is convenient to the lecturer chosen for the year.

ENGINEERING COURSES

Full courses are offered in

Civil Engineering,	Mechanical Engineering,
Municipal Engineering,	Electrical Engineering.

All engineering students pursue the same subjects for the first two years. At the end of that time it is believed that most men will be able to make an intelligent choice between Civil and Municipal Engineering on the one hand, and between Mechanical and Electrical Engineering on the other. At the end of the third year a civil engineering student decides further between the general Civil Engineering course (Group VII) and the Municipal Engineering course (Group VIII). At the same point in his studies a mechanical engineering student decides between the course in Mechanical Engineering (Group IX) and that in Electrical Engineering (Group X).

Civil Engineering is an increasingly comprehensive term. Beside municipal engineering it includes among other subdivisions, topographic, railroad, and structural engineering. The Municipal (Sanitary) Engineering course is offered for those who wish to specialize somewhat in subjects relating more particularly to the problems of sanitation and civic betterment with which the engineering department of a modern city is concerned. The field for the mechanical engineer also has broadened of late, resulting in its subdivisions into branches of activity which call for technical knowledge in special fields. No attempt has been made in the following courses to meet these special demands, as it is the aim of the department to graduate men well grounded in the fundamentals and sufficiently broad in training to fill positions of some responsibility in any part of the field. Students interested in mechanical engineering are advised to follow Group IX unless especially interested in applied electricity; in that case they are recommended to the course in Electrical Engineering, Group X.

Engineering graduates not infrequently find employment in positions in which some knowledge of a branch of engineering other than that for which they have been trained is necessary or valuable. The engineering instruction is on this account designed to be broad and fundamental, and subjects which tend toward extreme specialization are not offered.

An increasing proportion of graduates in engineering engage

in callings more or less closely related to engineering, such as manufacturing, contracting, or commercial lines. In view of this there have been included in the engineering courses such subjects as will lay the foundations of a broad scientific education.

The following seven technical subjects underlie all engineering training, and are required of all students in Groups VII, VIII, IX and X.

- 1. Elementary Mechanical Drawing.**—Use of instruments, orthographic, isometric and cabinet projections, simple sections, intersections and developments, lettering, sketching, tracing and blueprinting. Text-book, Graves' "Mechanical Drawing."

Three hours thruout the year. Credit of two semester hours.

Note. The College provides drawing desks, boards, etc., but each student furnishes his own drawing outfit, costing about eighteen dollars. Students are urged to avoid the purchase of cheap instruments which soon become worthless. Engineering students use their drawing instruments throughout their course and for years afterward. The purchase of an outfit of good grade is therefore economy.

- 2. Descriptive Geometry and Advanced Mechanical Drawing.**—The first semester's work comprises descriptive geometry, problems relating to the point, line, and plane in space, followed by a thoro drill in sections, intersections, and developments, with applications to engineering and architectural problems. The instruction is designed to develop in the student the power of concise reasoning.

During the second semester, the work is a continuation of Course 1 and covers lettering, conventional signs, perspective, typical design, working drawings illustrating the use of emperical design, etc. Text-books, Tracy and North's "Descriptive Geometry," Graves' "Mechanical Engineering," Hayes' "Emperical Design."

Two hours of recitation and four hours of drawing weekly, first semester; six hours of drawing weekly, second semester. Credit of five semester hours.

Prerequisite, Course 1.

- 3. Mechanics (A). Statics and Dynamics.**—Forces in equilibrium, simple structures, translation and rotation, work, energy, power. Text-book, Fuller and Johnston's "Applied Mechanics."

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Physics 1 and 2, Mathematics 3 and 4.

- 4. Metallurgy of Steel.**—A lecture course on the metallurgy of iron and steel. Ores and their preparation, blast furnace operation, manufacture of steel by open hearth, Bessemer, crucible and cementation processes, re-manufacture into commercial shapes.

One lecture weekly, second semester. Credit of one semester hour.
Prerequisite, Chemistry 1.

- 5. Hydraulics.**—A study of the mechanics of water at rest and in motion, with applications to a variety of problems relating to the pressure of water and to its flow in natural and artificial channels, pipes, etc. Text-book, Merriman's "Treatise on Hydraulics."

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Engineering 3 and Mathematics 5.

- 6. Materials Testing.**—Recitation and laboratory course in the study of the properties of engineering materials. In the first semester the standard tests of cement, mortar, and sand are made and compared. The common tensile, compressive, and transverse tests on steel, timbers, and concrete are made and discussed. The solution of practical problems is emphasized. The first semester's work is required of all engineering students. During the second semester the remaining common materials are tested, and the change in the properties of iron and steel due to heat treatment is taken up. The work of this semester is required only of students in Groups IX and X. Text-book, Boyd's "Strength of Materials."

Two recitations and three laboratory hours weekly, first semester. Credit of three semester hours. Three laboratory hours weekly, second semester. Credit of one semester hour.

Prerequisite, Engineering 3 and 4, and Mathematics 5.

- 7. Elements of Electrical Engineering.**—The application of the fundamentals of electricity and magnetism to electrical engineering practice. Theory, structure, and operation of electrical machinery. Recitation work supplemented by simple laboratory experiments. Text-book, Timbie's "Elements of Electricity."

One recitation and three laboratory hours weekly, first semester; two recitations and three laboratory hours, second semester. Credit of five semester hours.

Prerequisite, Physics 3 and 4, and Engineering 3.

CIVIL AND MUNICIPAL ENGINEERING.

Professor Allen and Mr. Faust.

- 11, 12. Surveying (A).**—The field work is done during a period of three weeks immediately preceding the beginning of the Junior year.* It consists of drill in the use of the more common surveying instruments, supplemented by daily recitations designed to co-ordinate the instruction. The remainder of the course consists of calculations and mapping done during term time. The calculations include those necessary in the ordinary office work of a land surveyor, while the mapping comprises plotting the notes of the survey made during the summer, tracing and blue-printing the map, and additional drill in plain lettering. Text-book, Breed and Hosmer's "Principles and Practice of Surveying," Vol. I.

Three weeks (145 hours) in August and September, and six hours of computation and drawing first semester. Total credit of four semester hours.

Prerequisite, Course 2.

- 13, 14. Surveying (B).**—The field work is done during a period of three weeks immediately preceding the beginning of Senior year.* Topographic surveying, using a variety of methods and instruments, including the plane table, supplemented by daily recitations. A short railroad survey and location. Adjustments of instruments. The office work, done in term time, includes instruction in topographic drafting and the use of topographic maps, also the treatment of various subjects in higher surveying. Text-book, Breed and Hosmer's "Principles and Practice of Surveying," Vol. II.

Three weeks (145 hours) in August and September, and six hours of drawing, first semester. Total credit of four semester hours.

Prerequisite, Course 11, 12.

- 15. Surveying (C).**—Required of students in Group IX; open to non-engineering students. A brief course in which a small survey is made, levels are taken, a map and a profile are plotted, some computing is done, etc.

Three hours of field work and drawing, weekly, first semester. Credit of one semester hour.

- 16. Railroads (A).**—A course in the mathematics of railroad curves, — simple, compound, and vertical; including

*The Summer Course in 1918 begins at 8 A. M. on Tuesday, Aug 27.

switches and spirals. Earthwork calculation and the construction of mass diagrams. Text-books, Allen's "Railroad Curves and Earthwork," and "Field and Office Tables."

Four recitations weekly, second semester. Credit of four semester hours.

Prerequisite, Course 11, 12.

- 17. Railroads (B).**—The necessary preliminary surveys are made during the preceding summer field work (Course 13). Course 17 includes making the plans, calculations, etc., involved in the preparation of a full report on the proposed construction, including its cost. Economics of railroad construction.

Six hours of drawing and computation weekly, second semester. Credit of two semester hours.

- 18. Mechanics (B).**—Stresses in framed structures, principally roof trusses and bridges of various types. Graphical methods of solution are employed. Text-book, Malcolm's "Graphic Statics."

Two hours of recitation and four hours of drawing weekly, first semester. Credit of two semester hours.

Prerequisite, Course 3.

- 19. Structural Design.**—A course in the strength of materials as applied to the analytical design of structures of wood and steel. Beginning with beams the student finally makes all the calculations necessary in the complete design of a plate girder and trusses of the riveted and pin connected types. Text-book, Spofford's "The Theory of Structures."

Given in the second semester, Junior year, and first semester, Senior year. Two hours recitation and four hours computation or drafting weekly in the Junior year; three hours recitation and six hours computation or drawing in the Senior year.

- 20. Structural Drafting.**—The making of detailed drawings for the component parts of a steel structure. Conformity with the best practice is required, and the drawings are carefully checked.

Six hours of drawing weekly, second semester. Credit of two semester hours.

- 21. Contracts and Specifications.**—The elements of contract law as applied to the mutual relations of engineer, contractor, and owner. Critical review of typical specifications and practice in specification writing. Text-book, Kirby's "Elements of Specification Writing."

One recitation weekly, second semester. Credit of one semester hour.

- 22. Masonry.**—Design and construction of stone and concrete structures, heavy foundations, arches, walls, and dams. Instruction is in part by recitation, but includes drafting-room work in the design of several typical structures. Text-book, Baker's "Masonry Construction."

Two recitations and three hours of drawing weekly, first semester. Credit of three semester hours.

- 23. Highways.**—Recitations on the design, construction, and maintenance of roads and pavements, with especial consideration of the exigencies of present-day traffic. Text-book, Blanchard and Drowne's "Highway Engineering."

Two recitations weekly, second semester. Credit of two semester hours.

- 24. Water Supply Engineering.**—The quantity and quality of water from various sources. Works for the collection and storage of water, for its purification and for its distribution. Text-book, Turneaure and Russell's "Public Water Supplies."

Two recitations weekly, second semester. Credit of two semester hours.

- 25. Sewerage.**—Various types of design and construction are discussed in recitations. Plans for a small sewer system are made by each student. Modern methods for the purification and disposal of sewage and garbage. Visits are made to plants under construction and in use. Text-book, Follwell's "Sewerage."

Two recitations weekly, second semester. Credit of two semester hours.

- 26. Civil Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, thruout the year. Credit of two semester hours. Open only to Seniors in Groups VII and VIII.

- 27. Civil Engineering.**—A series of lectures and discussions intended to give the student a general view of the field of civil engineering, and to help him to see the connection between the mathematical subjects of the Sophomore year and the practice of civil engineering.

One hour weekly, second semester. Credit of one semester hour. Required of Sophomores in Groups VII and VIII.

MECHANICAL ENGINEERING.

Professor Wing and Mr. Creager.

- 31. Shop Work (A).**—Simple exercises in the formation of green sand moulds, supplemented by lectures on modern foundry practice. Bench and lathe work in wood, elements of pattern making.

Six laboratory hours weekly, first semester. Credit of two semester hours.

- 32. Shop Work (B).**—Forge practice in iron and steel. Shaping, hardening, and tempering of tools. Machine and bench work in metals. Lectures on modern shop practice.

Six laboratory hours weekly, second semester. Credit of two semester hours.

- 33. Kinematics.**—Theory of mechanisms, instant centers, cams, gears, linkages, velocity and acceleration diagrams, etc. Recitation work supplemented by the solution of practical problems in the drawing room. Text-book, Barr and Wood's "Kinematics of Machinery."

Two recitations and six hours of drawing weekly, first semester. Credit of four semester hours.

Prerequisite, Course 2.

- 34. Machine Design. (A).**—An elementary course showing the application of the fundamentals of mechanics and kinematics to machine design. Selection of mechanisms for specified work, analysis of energy and force problems in machines, and proportioning of detailed parts from theoretical and practical considerations. Text-book, Kimball and Barr's "Elements of Machine Design."

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Course 6 (1st semester), 4, and 33.

- 35. Machine Design (B).**—Application of principles of Course 34 to the design of two typical machines, including all necessary computations; working drawings of most important parts, and a finished assembly drawing. Text-book, Kimball and Barr's "Elements of Machine Design."

One recitation and six hours of drawing weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 34.

- 36. Heat Power Engineering (A).**—Thermodynamics of gases and vapors, theoretical gas cycles, application of theory to problems of commercial heat engines, engine performances and efficiencies. Text-book, Hirshfeld and Barnard's "Elements of Heat Power Engineering."

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Mathematics 5, and Physics 1 and 2.

- 37. Heat Power Engineering (B).**—A continuation of Course 36. Fuels, combustion, boilers, gas engines, steam engines and turbines, power house auxiliaries, etc. Efficiency and economy of operation. Selection and combination of elements for power houses. This study covers the theory necessary for Course 38. Text-books, Hirshfeld and Barnard's "Elements of Heat Power Engineering," and Gebhardt's "Steam Power Plant Engineering."

Three recitations weekly, first semester. Two recitations weekly, second semester. Credit of five semester hours.

Prerequisite, Course 36.

- 38. Power Plant Design.**—Design of a typical power plant, selection and arrangement of main units and auxiliaries. An outline drawing is made showing the location and arrangement of boilers, turbines, condensers, pumps, etc., the provision for coal and ash handling, and storage. Economic features of power house design emphasized. Reference book, Gebhardt's "Steam Power Plant Engineering."

Six hours of computation or drawing weekly, second semester. Credit of two semester hours.

May be taken only in conjunction with Course 37.

- 39. Mechanical Engineering Laboratory.**—Calibration of common engineering measuring instruments, such as steam gauges, thermometers, indicator springs; determinations of quality of steam; measurements of power; efficiency tests of boilers, gas engines, pumps, etc. Computation periods.

Three laboratory hours weekly thruout the year. Credit of two semester hours.

Prerequisite, Course 36.

- 40. Mechanical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, second semester. Credit of one semester hour.

(Open only to Seniors in Group IX).

ELECTRICAL ENGINEERING.

Professor Wing and Mr. Creager.

- 45. Theory of Electrical Machinery.**—Fundamentals of the electric and magnetic circuit; representation of alternating currents and voltages by vectors and complex quantities; study of the alternating current circuit; theory of transmission lines; transformers, alternators, synchronous and induction motors, direct current machines, etc. Text-books, Christie's "Electrical Engineering" and Gray's "Electrical Machine Design."

Five recitations weekly, first semester. Two recitations weekly, second semester. Credit of seven semester hours.

Prerequisite, Course 7.

- 46. Characteristics of Electrical Machinery.**—This course supplements the work of Course 45. Problems in alternating current circuits. Outline design and predetermination of performance characteristics of transmission lines, transformers, alternators, alternating current motors and direct current generators and motors. Practice is given in the use of standard hand books. Reference book, Gray's "Electrical Machine Design."

Three hours of computation weekly, first semester. Nine hours of computation weekly, second semester. Credit of four semester hours.

May be taken only in conjunction with Course 45.

- 47. Electrical Engineering Laboratory.**—Elementary and advanced experimental work in electrical engineering: the study of polyphase alternating current circuits, shape of A. C. waves, determination of the magnetic properties of steel and iron; commercial testing of alternators, transformers, synchronous motors, induction motors, D. C. machines, etc. Text-book, Karapetoff's "Experimental Electrical Engineering."

Six laboratory hours and one report weekly thruout the year. Credit of four semester hours.

Prerequisite, Course 7.

- 48. Electrical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, second semester. Credit of one semester hour.

(Open only to Seniors in Group X).

Trips of Inspection.

Several short tours are arranged during the course for the inspection of engineering structures, power plants, shops, manufacturing establishments, etc., in the vicinity. Reports are prepared by each student from his individual notes.

Engineering Library.

A departmental library and reading room of reference books, periodicals, and technical reports is being built up in connection with the College Library. Students have access to the following publications:

"Engineering Record," "Municipal Journal," "Railway Review," "Engineering Magazine," "Machinery," "Power," "Electrical World," "General Electric Review," "Electric Journal," and the regular reports of the following societies: American Society of Mechanical Engineers, and National Electric Light Association.

Engineering Equipment.

For a detailed description of the equipment in engineering see page 125.

THE ENGINEER BRANCH OF THE RESERVE CORPS.

The War Department has placed this institution on its list of approved technical schools. This means that a student within the draft age who is pursuing any of the above courses in Engineering will be enrolled in the Engineer Branch of the Reserve Corps and allowed to finish his college course before being called into active service, provided he maintains a high scholarship rank.

MILITARY SCIENCE AND TACTICS

Major Graham and Color Sergeant Allen.

As a part of the program for national preparedness, Congress by Act of June 3, 1916, authorized the establishment and maintenance in civil institutions of learning fulfilling certain requirements, of units of the Reserve Officers' Training Corps, so that in time of national emergency there may be a sufficient number of educated men, trained in military science and tactics, to officer and lead intelligently the large armies upon which the safety of the country will depend. Under the provisions of this Act the President of the United States has established an infantry unit, senior division, of the Reserve Officers' Training Corps in this College and has detailed a regular army officer to serve here as Professor of Military Science and Tactics and a noncommissioned officer to serve as his assistant. In order to encourage students to enter this corps said Act of Congress makes very liberal provisions furnishing the members free of charge all the needed equipment in arms, tentage, ammunition, uniforms, and, in the case of those taking the advanced course, additional uniforms, training camp expenses, and an allowance in cash equal to the regular army garrison ration. The work includes lectures and classroom work as well as military drill, target practice and gymnastic exercises. The mental as well as physical benefits which a student may derive from this course are obvious; and it supplies in the most approved form that element of training in discipline and obedience to authority which has been largely lacking in the educational system of our country. There is an increasing demand thruout the country for teachers of high school grades who are able to give military instruction.

The following arms, tentage, and equipment are issued by the Government for every student undergoing military training: 1 rifle (complete), 1 gun sling, 1 cartridge belt, 1 bayonet scabbard, 1 haversack, 1 canteen, 1 cup, 1 knife, 1 fork, 1 spoon, 1 meat can, 1 shelter tent half, 1 shelter tent pole, 5 shelter tent pins. Swords and scabbard with the necessary attachments are issued for the use of student officers and noncommissioned officers. Special rifles for gallery practice are furnished as well as special models for range practice. The following allowance of ammunition, targets and target supplies is issued to each member of the Corps:

(1) Forty rounds of rifle ball cartridges for each range, but not to exceed 120 rounds.

(2) Sixty rounds gallery practice cartridges, caliber .22.

(3) Twenty rounds of rifle blank cartridges.

(4) Targets and target supplies.

Distinctive insignia, to be worn on the upper part of the left forearm, is issued to each student to indicate his rank as a cadet, and additional insignia is issued to indicate his rating for excellence obtained during the course of instruction and also a badge for proficiency in target practice for those who can earn it.

The course in Military Science and Tactics is divided into two parts, each one requiring two years of work. For the amount of college credit see the outline of Groups, pp. 28-59.

FIRST COURSE.

Any student electing this course must devote an average of at least three hours per week for two successive years to the work required (First Year and Second Year, pp. 101-102). In addition to arms, tentage, and ammunition, the Secretary of War will furnish, free of charge to each member of the Corps, the following uniform:

1 breeches, woolen, olive drab, pair.

1 cap, olive drab.

1 coat, woolen, olive drab.

1 leggings, canvass, pair.

1 cap and collar ornament, set.

1 shoes, russet, pair.

This uniform will be worn at all times when college is in session.

ADVANCED COURSE.

When any member of the Reserve Officers' Training Corps has completed (here or elsewhere) the first two academic years of service, and has been recommended for further military training by the President of the College and the Professor of Military Science and Tactics, he will be furnished by the U. S. Government commutation of subsistence (an allowance) equal to the regular garrison ration prescribed for the Army. This allowance now is 50 cents per day, extending thru and including the summer recess between third and fourth years. A student electing to take this advanced course will be required to devote an average of at least five hours per week to the work during the remainder of his college course (Third Year and Fourth Year, pp. 102-103). A considerable portion of this instruction will be given in other depart-

ments of the college in the classes in history, economics, political science, hygiene, sanitation, etc., so that the five required hours per week will, as a rule, not add appreciably to the time required during the first two years. He must also attend the training camps prescribed by the Secretary of War during the third and fourth years, his transportation to and from these camps, and his subsistence while there being paid for by the U. S. Government. He will be provided with arms, ammunition and uniform, as during the first two years, and in addition the following uniform for camp service:

- 1 hat, service.
- 1 cord, hat.
- 2 breeches, cotton, olive drab, pairs.
- 2 shirts, flannel, olive drab.

OUTLINE OF THE COURSES IN MILITARY SCIENCE AND TACTICS.

First Year.

1. Military Art.—Three hours a week during the first semester.

(a). **Practical.** Weight 10.

Physical drill (Manual of Physical Training—Koehler); Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad and Company, close and extended order. Preliminary instruction sighting position and aiming drills, gallery practice, nomenclature and care of rifle and equipment.

(b). **Theoretical.** Weight 4.

Theory of target practice, individual and collective (use of landscape targets made by U. S. Military Disciplinary Barracks, Fort Leavenworth, Kans.); military organization (Tables of Organization); map reading; service of security; personal hygiene.

2. Military Art.—Three hours a week during the second semester.

(a). **Practical.** Weight 10.

Physical drill (Manual of Physical Training—Koehler); Infantry drill (U. S. Infantry Drill Regulations), to include School of Battalion, special attention devoted to fire direction and control; ceremonies; manuals (Part V, Infantry Drill Regulations); bayonet combat; intrenchments (584-595, Infantry Drill Regulations); first-aid instruction; range and gallery practice.

(b). Theoretical. Weight. 4.

Lectures, general military policy as shown by military history of United States and military obligations of citizenship; service of information; combat (to be illustrated by small tactical exercises); U. S. Infantry Drill Regulations, to include School of Company; camp sanitation for small commands.

Second Year.

3. Military Art.—Three hours a week during the first semester.

(a). Practical. Weight 10.

The same as Course 2(a). Combat firing, if practicable, but collective firing should be attempted in indoor ranges by devices now in vogue at United States Disciplinary Barracks.

(b). Theoretical. Weight 4.

United States Infantry Drill Regulations, to include School of Battalion and Combat (350-622); Small-Arms Firing Regulations; lectures as in (b) Course 2; map reading; camp sanitation and camping expedients.

4. Military Art.—Three hours a week during the second semester.

(a). Practical. Weight 10.

The same as Course 2(a); signaling; semaphore and flag; first-aid. Work with sand table by constructing to scale intrenchments, field works, obstacles, bridges, etc. Comparison of ground forms (constructed to scale) with terrain as represented on map; range practice.

(b). Theoretical. Weight 4.

Lectures, military history (recent); service of information and security (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping expedients); marches and camps (Field Service Regulations and Infantry Drill Regulations).

Third Year. Advanced Course.

5. Military Art.—Five hours a week during the first semester.

(a). Practical. Weight 13.

Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises laid down for the unit. Military sketching.

(b). **Theoretical.** Weight 11.

Minor tactics; field orders (studies in minor tactics, United States School of the Line); map maneuvers.

Weight 8.

Company administration, general principles (papers and returns). Weight 1.

Military history. Weight 2.

6. Military Art.—Five hours a week during the second semester.

(a). **Practical.** Weight 13.

Same as (a) Course 5. Military sketching.

(b). **Theoretical.** Weight 11.

Minor tactics (continued); map maneuvers. Weight 8.

Elements of international law. Weight 2. Property accountability; method of obtaining supplies and equipment (Army Regulations). Weight 1.

Fourth Year. Advanced Course.

7. Military Art.—Five hours a week during the first semester.

(a). **Practical.** Weight 13.

Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises scheduled for the unit. Military sketching.

(b). **Theoretical.** Weight 11.

Tactical problems, small forces, all arms combined, map maneuvers; court-martial proceedings (Manual for Courts-martial).

International relations of America from discovery to present day; gradual growth of principles of international law embodied in American diplomacy, legislation, and treatise. Lectures: Psychology of war and kindred subjects.

General principles of strategy only, planned to show the intimate relationship between the statesman and the soldier (not to exceed 5 lectures).

8. Military Art.—Five hours a week during the second semester.

(a). **Practical.** Weight 13.

Same as Course 7(a).

(b). **Theoretical.** Weight 11.

Tactical problems (continued); map maneuvers. Rifle in war.

Lectures on military history and policy.

No student electing one of these courses will be promoted to the next higher class in College or graduated from College unless he has completed the work of the course for the previous year to the satisfaction of the Professor of Military Science and Tactics.

The appointment of cadet officers and noncommissioned officers for the Corps are made from members of the Junior and Senior Classes in College and from members taking post-graduate courses, provided there is a sufficient number. It is the intention to give the student entering the advanced course the benefit of an opportunity of training in a responsible rather than in a subordinate position.

No military duties in addition to the training courses outlined are required from members of the Reserve Officers' Training Corps. If any student desires to serve as a member of any branch of the armed forces of the country he must enlist according to the regulations like any other recruit.

A student having completed these courses will on graduation from College be eligible for appointment to the Officers' Reserve Corps as a temporary second lieutenant of the regular army in times of peace for purposes of further instruction, for a period not exceeding six months, with all the allowances now provided by law for that grade, but with pay at the rate of \$100 per month.

For those who aspire to enter the ranks of regular army officers from civil life the Reserve Officers' Training Corps in our College offers unexcelled advantages and opportunities.

GENERAL INFORMATION

The College aims to develop the greatest possible individuality and the highest manhood of the student. The prevailing influences are such as tend to lead young men to an active Christian life and to a full realization of their personal responsibilities. The immediate supervision of the students is in the hands of the President and Dean with the Class Advisers.

CLASS ADVISERS.

A professor is appointed as Adviser for each class. The members of the class should present any request to the Faculty thru their Class Adviser and confer with him on personal and college matters (see page 14 for list of Class Advisers).

STUDENT GROUP ADVISERS.

The professor at the head of each Department acts as the adviser of all the students having a major in his Department. He is known as the Group Adviser. He exercises oversight in the student's selection of electives and in the general character of his work. The Group Advisers are as follows: Group I, Professor Biklé; Group II, Professor Grimm; Group III, Professor Valentine; Group IV, Professors Breidenbaugh and Parsons; Group V, Professor Stahley; Group VI, Professor Ashworth; Groups VII and VIII, Professor Allen; Groups IX and X, Professor Wing.

STUDENT COUNCIL.

Without lessening its authority and responsibility, the Faculty has delegated certain duties in government to the student body as an exercise in self-government. The students act through a Student Council consisting of four

Seniors, three Juniors, two Sophomores, and one Freshman, elected by their respective classes. This Council acts in certain matters of discipline and in matters concerning the general welfare of the student body, and is one medium of communication between the students and the Faculty. Hazing in any form is forbidden. To have or to drink intoxicating beverages or to frequent places where such beverages are dispensed is forbidden.

TERMS AND VACATIONS.

The college year of 35 weeks is divided into two semesters. The first semester begins at 11 A. M. on the third Wednesday in September and continues, with recesses at Thanksgiving and Christmas, to the first Saturday of February; the second semester begins when the first semester ends and continues, with an Easter recess, to Commencement Day, the second Wednesday of June. The closing days of each semester are devoted to examinations.

ATTENDANCE.

Every student is required to attend on week days a prayer service at 12 M., in Brua Chapel. On the Lord's Day attendance is required at the morning service in the College Church. Those affiliated with other denominations than the Lutheran are, on request of their parents, granted permission to attend elsewhere. Ten per cent absences are allowed from chapel and church services each semester under the rules governing absences from class work.

Each student is allowed individually ten per cent absences from class room work in each course each semester. Fractions are not counted and absences may not exceed four in any course during a single semester.

A further allowance of absences may be granted to members of athletic teams and musical organizations, to

participants in literary contests, and to representatives of societies for the purpose of attending conventions, but such extra allowance may in no case exceed five per cent.

Absences are reckoned from the first day of the first semester. Any absence on the two days preceding and the two days following any recess is counted as two absences.

If a student has further absences from the work of any instructor, the instructor may impose extra work or may exclude the student from the examination in the subject in which the absence has occurred.

Unexcused absences count as zero on grade.

Absences are not allowed for announced examinations. Such absences can be excused only by action of the Faculty, and the substitute examination will be held at such time as the instructor shall appoint.

Gymnasium work of two periods weekly through the winter season, extending from Dec. 1 to Mar. 15, is required of the Freshman class, special cases for sufficient reasons excepted. Two absences are allowed for the season. Credits are given for attendance and attention, and any shortage in credits due to absences or lack of interest must be made up later.

ELECTIVES.

A student having electives must deposit with the Registrar, within the first two days of the year, a written list of his electives, bearing the endorsement of the student's Group Adviser and of the instructors concerned. After the first week of the year changes in electives can be made only when approved by the Faculty, under such conditions as may be determined in each case. No regular student may drop an elective subject without faculty permission; failure to secure such permission will be regarded as a deficiency in the subject.

EXAMINATIONS.

Examinations are held in all subjects at the close of each semester or when, during the term, a subject is completed. Instructors may hold topical or quiz examinations at the time of any of the regular appointments with the class. Absences from these examinations are governed by the rules given above.

CONDITIONS AND DEFICIENCIES.

Freshman entrance conditions must be satisfied by the beginning of the Sophomore year.

A student whose grade in any course is reported as deficient at the close of a semester must present himself for re-examination at the beginning of the next semester; failing in this examination he must repeat the semester's work in that course. The matter of re-examinations is governed by the following rules:

1. Re-examinations for those students whose grade, as reported to the Registrar at the close of the previous semester, is "E" or "incomplete," shall be held at such a time as the instructor shall appoint, not later than October 10 in the first semester and not later than March 1 in the second semester.

2. Re-examinations must be given by the instructor at such a time as not to conflict with any of the regular classwork of the student.

3. A student may be allowed, upon written permission of the instructor, approved by the group adviser, to defer the re-examination until the final examination at the end of the semester's work in the next succeeding class in the given subject.

4. If the student fails to pass the re-examination given under rules 1 or 3, he must repeat the semester's work in the given course.

5. Failure to report for the re-examination at the time appointed will count as a failure in the examination

unless, owing to sickness or urgent necessity, the faculty allow another re-examination.

A student who at the beginning of any college year continues deficient in more than one third of a year's work will be enrolled with the class in which the deficiency occurs. The student will not be advanced in enrollment with his class until the deficiency has been removed.

A student deficient at the beginning of a year in courses aggregating twelve semester hours will be required to drop a corresponding number of semester hours in the regular work of the year.

RECORDS.

A record of scholarship and deportment, under the care of the Registrar, is kept for each student. The grades of scholarship are designated as follows: A (excellent), B (good), C (fair), D (poor, barely passed), E (failed, but entitled to another examination), F (failed utterly and must repeat with the next class), and Inc. (incomplete).

REPORT.

A report from the above record is sent to the parents or guardian of each student at the end of each semester. About the middle of each semester notice is given to the student and to his parents or guardian if his work is of low grade or if he has an excessive number of absences.

REQUIREMENTS FOR GRADUATION.

Every student completing the prescribed work of any group of studies as tabulated under Outline of Groups, p. 28-59, and an original English essay (see page 112), will receive the degree pertaining to that group, either Bachelor of Arts or Bachelor of Science; provided, however, that no regular student shall carry less than sixteen or more than twenty semester hours in any semester, unless by special permission of the Faculty.

No student will be graduated who is not present at Commencement, unless he be excused by the Faculty.

CERTIFICATES.

Partial and Special Course students, as well as those who withdraw before completion of a full course of study, are entitled to a certificate giving a copy of the college record.

MASTER'S DEGREE.

The degrees of Master of Arts and Master of Science are conferred on those having the Bachelor's degree from approved colleges, according to the following regulations:

1. The Master's degree is conferred upon graduate students on the completion of at least one year of resident work. Such students must present to the Faculty Committee on Advanced Degrees, for approval, a plan of advanced studies involving the equivalent of at least twenty-four semester hours. It is recommended that at least one-half of the course be devoted to some one subject.

2. The Master's degree is also conferred on non-resident graduates of this College. These must, however, at the beginning of their candidacy arrange with the Faculty Committee on Advanced Degrees (see page 14) a systematic course of study, and must report at stated times to the head of the department in which the subjects have been chosen.

In either case the candidate must pass examinations satisfactory to his instructors and to the committee. Previous to the final examinations the instructors in charge shall file with the committee a statement of the work done by the candidate. If the report is satisfactory, the candidate will be permitted to present himself for final examination. He shall also be required to prepare an essay or thesis upon an approved subject bearing on his principal study. This essay or thesis must be completed and submitted to the committee at least one month prior to the

Commencement at which the degree is to be conferred; if accepted, it becomes the property of the College.

Graduates of this College who have devoted at least one year to graduate work in residence at other colleges or universities and have fulfilled the above requirements may be admitted by the Faculty to the Master's degree. It may also be conferred upon college graduates who have completed courses of advanced study in professional schools, provided that the work done be in kind, grade, and amount equivalent to that required of other candidates for the same degree and that it has not been offered to satisfy the requirements for a professional degree.

HONORS.

The following honors will be awarded at the close of each year:

A. Final Honors will be awarded to members of the graduating class meeting the following conditions:

General Final Highest Honors will be awarded to those students who have maintained thruout their four years the grade of A in all of their studies.

General Final Honors will be awarded to those students who have maintained the grade A in at least half of the work of their four college years and have not fallen below the grade B in their studies.

Students entering at the beginning of the Sophomore year will be awarded the same honors if for three years they meet the above requirements as to grade.

B. Department Final Honors. If the head of any department recommends a student taking a major in that department as having shown special excellence in that work, the student shall be awarded Final Honors in that department provided he does not have a grade below B in more than three courses in other departments.

C. Class Honors for Freshman, Sophomore, Junior, and Senior Years. Highest Honors for the designated year will be awarded to those members of these classes

who have maintained the grade A in all of their studies thruout the year.

Class Honors for any particular year will be awarded to those members of the class who have maintained the grade A in at least half of the work of the year and do not have a grade below B in any of their studies for the year.

These awards are announced at Commencement and published in the next Catalog number of the BULLETIN.

PRIZES.

Muhlenberg Freshman Prize. The interest of a fund of five hundred dollars, contributed by F. A. Muhlenberg, D.D., LL.D., a former professor in this College, is given at the close of each year to that member of the Freshman Class who is found to have attained the highest grade of scholarship in Group I.

Baum Mathematical Prize. Charles Baum, M.D., Ph.D., Class of 1874, of Philadelphia, has contributed five hundred dollars, the income from which is to be given annually to that member of the Sophomore Class who shows the greatest proficiency in Mathematics.

Hassler Latin Prize. Mr. Charles W. Hassler furnished a fund, the interest of which is annually expended for the purchase of a Gold Medal, to be presented to that student of the Junior Class, who, at the end of the year, shall be rated as the best Latin scholar.

Graeff Prize. This prize was founded by Mr. John E. Graeff, Class of 1843. The interest on a fund of \$500 is awarded for the best English Essay from a member of the Senior Class, on a subject previously assigned. The decision is made by a committee appointed by the Professor of English.

In order to complete the requirements for graduation (see p. 109) each member of the Senior Class must write and submit, on or before May 1 of the Senior year, an original essay in English, in length not less than 1500 words nor more than 3,000. This essay may be submit-

ted in competition for the Graeff Prize; provided that in such case the subject shall be the subject announced in that contest.

Prizes in Debate. The Literary Societies of the College provide three prizes of \$36, \$24, and \$15, respectively, for the encouragement of skill in debating. The first contest takes place about the middle of November between teams chosen by the Sophomore and Freshman Classes, respectively, and the winning team is rewarded with \$15. The second contest between the winning team and a team from the Junior Class, takes place about the middle of March, and the team that wins this contest receives \$24. The third contest, between the second victors and a team from the Senior Class, takes place about the middle of May, and the winners of this contest receive \$36. Winners of the prize of \$36 are excluded from further competition.

Elinore Taylor Brewer Greek Prize. The Class of 1883 has contributed the sum of five hundred dollars, the income from which is annually awarded as a prize to that member of the Sophomore Class who has done the best work in the regular Sophomore Greek course.

Samuel Garver Latin Prize. The income from a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Latin during his Freshman year.

Samuel Garver Greek Prize. The income of a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Greek during his Freshman year.

No student shall be eligible to any honor or prize unless he has had at our own College all the work required of all students in all groups for the year or years for which the honor or prize is awarded; and (unless substi-

tutions have been approved at the time by special Faculty action) he must have had also all the work required in his group for the year or years for which the honor or prize is awarded.

SCHOLARSHIPS AND AIDS FOR STUDENTS.

Endowed scholarships worth \$30 each, and a limited number of scholarships worth \$50 each, are awarded annually to deserving students by the Finance Committee of the Board of Trustees. All applications for these scholarships must be made in writing and must state in full the reasons for the request. Such applications must be handed to the President before October 1 of the college year.

An endowment fund of \$5,000 for the aid of worthy and needy students has been established by Mr. C. H. Boyer as a memorial to his father, Rev. Matthew G. Boyer, D.D., '65, for over eighteen years a most faithful and efficient member of the Board of Trustees of the College. The income from this fund is divided into ten scholarships of \$25 each, awarded annually. Applications for this aid must be in writing addressed to Mr. C. H. Boyer, 29 La Salle St., Chicago, Ill., or to the President, before October 1 of the college year.

Rev. Sydney E. Bateman, M.D., Class of 1887, has established a scholarship fund of \$500, the income from which is awarded each year to a needy student preparing for the ministry. Applications for this and must be handed to the President before October 1 of the college year.

The Parent Education Society of the General Synod controls ten scholarships, worth \$30 each, which are open to young men preparing for the ministry in the Lutheran Church. Applications for the use of these scholarships should be made to the Chairman of the Scholarship Committee, J. A. Singmaster, D.D., Gettysburg, Pa.

A number of other \$30 scholarships have been endowed and are controlled by congregations, synods, and individuals. The Gettysburg School Board controls such a scholarship established by C. W. Thompson, Esq., of Lebanon, Pa. The authorizations from those controlling these scholarships must be handed to the President before October 1 of the college year.

A considerable number of students earn part of their college fees by caring for halls and class rooms and by doing other work about the campus and buildings. Twenty-five cents an hour is allowed for these services. All applicants for such employment must hand a written request for it to the President before October 1 of the college year.

Upperclassmen are employed as proctors and caretakers of the various college buildings and as assistants in the laboratories. One is employed to have charge of the Reading Room. These appointments are made by the Faculty; and applications for such positions must be made in writing and must be in the hands of the President before May 1 of the preceding college year.

There are many opportunities in the town of Gettysburg for students to earn money. Rev. S. F. Snyder, Assistant to the President, will be glad to assist those who desire such outside employment. Many students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College. Some of the students are granted allowances by the Athletic Council for work and supervision in the Gymnasium and on the Athletic Field. A number of students earn their board by managing student eating clubs, of which there is a large number, or by waiting on the table. Others earn money by acting as newspaper correspondents.

Any student wishing to engage in business or to undertake employment during term time is required to obtain permission from the President or Dean. Any violation of this rule is regarded as a misdemeanor.

The children of clergymen are allowed a reduction of one-half of the tuition.

TREASURER'S BILLS.

The bills of the College Treasurer are made out for each semester and include half of each item for the college year.

No student will be graduated until all financial obligations to the College and for class publications and other student interests are settled, except when a student has registered a timely protest with the Faculty and the claim for relief has been allowed. No credits for college work done or statement of honorable dismissal will be certified to until these financial obligations have been paid.

COLLEGE FEES.

A Registration Fee of \$5 is required on entering College and is payable to the Registrar.

The annual charge for Tuition is \$100.

Special course students must pay \$10 tuition per course for each semester, but they are not required to pay the enrollment fee.

In any course pursued for a Master's degree the charge for Tuition is \$75, when all the instruction has been given by members of the College Faculty. Of this \$25 is considered as a Registration Fee and is payable in advance, the balance being due one month previous to the date set for the conferring of the degree. Laboratory charges are extra. When the Master's degree is taken *in absentia* the total fee is \$25 payable in advance. Students in the Theological Seminary at Gettysburg may become candidates for the Master's degree by paying the regular registration fee of \$25; they are exempt from the payment of tuition exclusive of possible laboratory fees.

The Reading Room Fee is \$1.50.

The annual Gymnasium and Athletic Fee is \$8. This gives the student free admission to all intercollegiate games in Gettysburg.

ANNUAL LABORATORY FEES.

Based on three laboratory periods per week these are:

Biological Laboratory	\$14.00
Chemical Laboratory	18.00
Physical Laboratory	12.00
Mineralogy for the course	3.00
Botany for the course	4.00
Bacteriology for the course	5.00

In addition to the Chemical Laboratory Fee a charge is made for apparatus broken or not returned in good condition. In the Physical Laboratory an additional charge is made for material used and any damage done to apparatus.

ANNUAL ENGINEERING FEES.

Junior year	\$15.00
Senior year	15.00
Summer Course in Surveying	10.00

In addition to these engineering fees a charge is made for apparatus broken or not returned in good order. A charge is also made for engineering apparatus used by students who do not pay the annual engineering fees.

BOARDING.

The College does not maintain a dining hall. The students receive excellent board in clubs and with private families at a cost of from \$3.50 to \$4.50 per week.

ESTIMATED COST OF A YEAR IN COLLEGE.

The expenses of a college student depend largely on the training and habits of the individual. To aid the student rooming in a College dormitory to calculate the probable cost of a year in college at Gettysburg the following estimates are submitted:

(A). ITEMS ON COLLEGE BILL.

	Low.	Moderate.	Liberal
Tuition	\$100.00	\$100.00	\$100.00
Reading Room Fee.....	1.50	1.50	1.50
Room rent and heat (half room)	10.00	25.00	40.00
Gymnasium and Athletic fee	8.00	8.00	8.00
Electric light (half room)	3.15	3.15	6.30
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Payable to Treasurer	\$122.65	\$137.65	\$155.80

(B). OTHER EXPENSES.

Board for 35 weeks.....	\$122.50	\$140.00	\$157.50
Laundry	15.00	18.00	20.00
Books and stationery.....	15.00	18.00	20.00
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Est'd cost for college year..	\$275.15	\$313.65	\$353.30

To the above should be added laboratory or engineering fees in case the student takes courses involving such charges.

COLLEGE DORMITORY ROOMS.

The following rules govern the assignment of dormitory rooms in Pennsylvania Hall, Cottage Hall, McKnight Hall, and Thaddeus Stevens Hall.

Non-resident students are required to room in the college dormitories unless excused by the Committee on Dormitory Rooms. A non-resident student rooming outside of the dormitories will be charged \$7.50 each semester for this privilege unless there are no dormitory ac-

commodations available or for special reasons this charge is remitted by the Faculty.

No reservations of room beyond the actual needs of the students are permitted. No student is allowed to change his room or to take in a roommate without permission from the Committee on Dormitory Rooms and if allowed a new rental contract must be signed.

RESERVATIONS OF ROOMS BY MEMBERS OF THE STUDENT BODY.

All rooms are declared vacant May 1 of each year. On this date the reservation of rooms for the next college year begins. Students desiring to remain in the rooms that they have been occupying have that right provided they make application and sign the rental contract at the Registrar's office before May 8. After this date all rooms not reserved in this manner are open for assignment, on the days announced by the Registrar, to the members of the several classes in the following order: Juniors, Sophomores, Freshmen. Within the respective classes the order of choice and assignment is determined by lot conducted by the Registrar.

RESERVATION OF ROOMS BY NEW STUDENTS.

Rooms not reserved before May 15 will be available for assignment, in the order of the applications, to new students desiring to enter College the following September. The Registrar will reserve rooms for such students by correspondence if he is informed, at least approximately, of the kind of accommodations desired and whether or not a roommate is wanted. A deposit of five dollars with the Registrar is required from every new student reserving a room, which deposit will be deducted from his first semester bill. The rental contract involved may be signed at any time before the opening of College. Applications for such reservations should be made as early as possible both for the purpose of securing a satisfactory

room and to relieve the rush at the opening in September.

ASSIGNMENT OF ROOMS IN THE ATHLETIC FIELD HOUSE.

The assignment of rooms in the Athletic Field House is made by the Athletic Council. Applications for these rooms must be made in writing and sent to Mr. S. F. Snyder, Graduate Athletic Manager, Gettysburg, Pa., not later than May 7. Assignments to the new students entering in September will be made later in the order of the applications.

DORMITORY ROOM FURNITURE.

The rooms in Thaddeus Stevens Hall and the Athletic Field House are furnished by the College; all other rooms are furnished by the occupants. Students graduating from College or changing from one room to another usually sell their furniture to the new occupants at a fair price mutually agreed upon. This plan is regarded highly desirable by the college authorities. The Finance Committee of the Board of Trustees has engaged a competent appraiser who has no direct interest in connection with the College to determine the value of the furniture in any room when asked to do so. When students are unable to agree on the price for the furniture in a room, this appraiser will serve as an expert to adjust the matter. Any failure to make an adjustment on the basis of the findings of the appraiser must be referred to the Committee on Dormitory Rooms for final action.

ROOM RENT.

The charge for room rent, including steam heat, is given below for each room in the above-mentioned dormitories, and covers the period commencing the Saturday before College opens in September and ending the Saturday after College closes in June, with the exception of the Christmas vacation. The occupants of a room pay equal parts of the rental. Not more than two stu-

dents are allowed to occupy one room or suite except in the case of some of the larger suites. In Pennsylvania Hall the designations are E for east division, M for middle division, and W for west division. McK indicates McKnight Hall; C Cottage Hall; T Thaddeus Stevens Hall; F, Athletic Field House.

\$18.00: 255, 256, C.

\$20.00: 106, 108, W; 120, 122, E; 357, 358, 360, C.

\$22.00: 105, 107, W; 119, 121, 123, E.

\$25.00: 353, 354, 362, C.

\$26.50: 103, W; 125 E.

\$27.50: 101, W; 127, E.

\$30.00: 340, McK; 270, F.

\$35.00: 111, 117, 118, M; 140, McK; 361-363, C; 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, T.

\$37.50: 104, W.

\$42.00: 206, 208, 306, 308, 406, 408, W; 210, 410, M; 220, 222, 224, 320, 322, 324, 420, 422, 424, E.

\$44.00: 205, 207, 305, 307, 405, 407, W; 219, 221, 223, 319, 321, 323, 419, 421, 423, E; 333, 334, 335, 336, 343, 344, 345, 346, McK.

\$45.00: 153, 359, C.

\$48.00: 240, McK.

\$49.50: 337, 338, 341, 342, McK; 173, F.

\$55.00: 204, 304, 404, W; 211, 217, M; 226, 326, 426, E; 331, 332, 347, 348, McK.

\$57.00: 202, 203, 302, 303, 402, 403, W; 225, 228, 325, 328, 425, 428, E.

\$60.00: 201, 301, 401, W; 227, 327, 427, E; 157, 158, C; 273, 274, F; 38, 39, 40, 41, 43, 44, 45, 46, T.

\$62.00: 257, 258, C.

\$65.00: 154, C.

\$70.00: 159, 160, 259, 260, C; 172, 271, 272, F.

\$77.00: 212, 218, 312, 318, 412, 418, M.

\$80.00: 161, 162, C; 170, 171, F; 16, 42, T.

\$82.50: 133, 134, 137, 138, 141, 142, 145, 146, McK.

\$85.00: 251-253, 252-254, C.

\$88.00: 411, 417, M; (suites of two rooms).

\$95.00: 242 and 244, McK; 241 and 243, McK; 235 and 237, McK; 236 and 238, McK; (suites of two rooms).

\$100.00: 261-263, 262-264, C.

\$140.00: 233, 245, McK; (suites of three rooms).

Rooms 111, 117, 118, 212, 218, 312, 318, 411, 412, 417, 418, M, include a large study and a good-sized bedroom. Odd numbers are on the south side of the building in Pennsylvania Hall and on the west side of the building in McKnight Hall.

The cost of electric light, eighteen cents per week for each 40-watt Tungsten lamp or its equivalent, is charged on the regular College bills. Any damage done to a room will be charged up against the occupants. Only the Superintendent of Buildings and Grounds is allowed to change the locks on doors. The rooms must at all times be accessible to the College authorities. The occupants of a room will be held personally responsible for the order maintained in that room. Students disregarding Faculty or Student Council Dormitory Regulations will forfeit their rights as occupants. Janitresses are employed by the College to clean thoroly and set to rights every student room in the dormitories periodically; this service is without cost to the students. The Registrar will be glad to furnish any additional information that may be desired about dormitory rooms as well as rooms in the homes of families living in the town.

STUDENT PROPERTY.

The College disclaims all responsibility for the care or safety of any property belonging to students. With the exception of furniture, mattresses, tacked-down carpets and window shades, any student property left in a dormitory room during the summer vacation must be securely packed in barrels or boxes distinctly marked with the owner's name and the number of his room. No property should be left in closets or bureau drawers. This is to insure against possible loss and to facilitate the cleaning of the rooms.

MATERIAL EQUIPMENT

LIBRARIES.

The College Library contains 23,900 volumes, besides numerous unbound pamphlets. It is a regular depository of the United States Government and the Government of the State of Pennsylvania. Several hundred volumes of public documents are annually received from these sources.

The Library is available to all students under established regulations. During term time it is open for consultation and the drawing of books eight hours each week day, except on Saturday, when it is open for four hours. The librarian and his assistants are always ready to aid the students. The opportunities for the use of the Library are continually being increased by means of a systematic organization and the building up of a complete and attractive library of reference.

The income of a fund invested for the purpose partly provides for needed additions. Five per cent of the money received from tuition is also available for library purposes.

In the same hall with the College Library are the Libraries of the two Literary Societies. They comprise a large number of well-selected and standard volumes, which are annually increased thru the income of separate funds. The Philomathean Library contains at present over 7,200 volumes; the Phrenakosmian Library over 7,850 volumes. These libraries are accessible to the members of the societies under their respective regulations, and are open for the issue of books on Wednesday at 4 P. M., and Saturday at 10 A. M., during term time.

READING ROOM.

The Reading Room is well supplied with daily and weekly papers and leading literary and scientific periodicals, thus enabling the student to become acquainted with current events and contemporary, scientific, literary, and other cultural movements. An annual fee of \$1.50 is charged to each student toward its maintenance.

LABORATORIES.

The Biological Laboratories on the second floor of Glatfelter Hall consist of two large, well-lighted, communicating rooms. They are supplied with twenty-five fine microscopes, and all the other appliances necessary in carrying on the work of the course outlined in the Department of Biology.

The Chemical Laboratories in the Chemical Laboratory Building, as described on page 129, are amply equipped with all the conveniences and apparatus and supplies that are desirable in the requirements for general and analytical chemistry, including work in organic preparations, proximate analysis, examination of water, and other special subjects.

The Physical Laboratory. The lecture room is provided with a large table with sink, water, gas, and electrical connections; apparatus supports, blackboard, charts, and black curtains and a hand-painted screen for stereopticon work. The laboratories, comprising six rooms for general work, besides photographic dark rooms, store room, and storage battery room, and the lecture apparatus room are equipped with modern and carefully selected apparatus for both elementary and advanced work. Alternating and direct electric current is supplied at different points by means of a central switch board, a motor generator, and a storage battery. The apparatus includes a Geryk double cylinder oil immersion air pump, high grade balances, spectrometers, photometer, and stereopticon; and in electricity, D'Arsonval galvanometers,

Wheatstone bridges, potentiometer, voltmeters, standards of resistance, capacity, electro-motive force, and self-induction, ammeters and voltmeters for direct and alternating currents (all of the best make); a complete dynamo and motor set illustrating different styles of direct and alternating current machines (induction, synchronous, three-phase, etc.); an induction coil giving an 8-inch spark, high frequency coils, electric wave apparatus, and telegraph, telephone, and wireless telegraph outfits, and Kathode ray and X-ray tubes.

ENGINEERING EQUIPMENT.

The equipment in the Engineering Departments is modern and adequate and is being augmented as necessity demands.

Instruction in mechanical drawing is given in a large, well-lighted room in Glatfelter Hall. The department is well equipped for the purpose and is supplied with drawings illustrating the best recent practice.

The surveying equipment is adequate for the purposes of practice in all kinds of surveying. It includes, besides a number of transits and levels, a plane table, traverse board, sextant, planimeter, level and stadia rods, tapes, etc.

The facilities for materials testing include a 100,000 pound Riehle universal testing machine, with the necessary measuring instruments for the determination of the physical properties of steel, cast iron, wrought iron, timber, concrete, etc. There is also a cement laboratory, with a Riehle tensile briquette machine of 1,000 pounds capacity, and a variety of other apparatus for making all the standard physical tests of cement, sand, and mortar.

The pattern shop, located in a commodious room in the basement of Glatfelter Hall, is supplied with speed lathes and an oilstone grinder, also numerous benches and hand tools, all of the most modern type. In addition there has been provided foundry equipment of an elementary na-

ture for illustrating the fundamental principles of moulding. The College has installed a medium-sized engine lathe, a drill press, emery wheels, and numerous vises and bench tools. A portable forge with the usual collection of small tools has been added.

Thru the courtesy of manufacturers in the vicinity of Gettysburg, arrangements have been made whereby students may spend a short time as apprentices in well-equipped machine shops. By such co-operation it is hoped that the students' knowledge of manufacturing processes will be increased to a greater extent than would be possible in a course of shopwork conducted entirely in a college laboratory.

The foundation of an electrical engineering laboratory has been laid. There are facilities for work in both direct and alternating current phenomena. The apparatus includes several direct current motors and generators, a rotary converter, a synchronous motor, several polyphase and single phase induction motors, a number of transformers, and an assortment of direct and alternating current measuring instruments.

In connection with the College heating and pumping plant there is available for commercial testing such equipment as boilers, a gas engine, and two pumps. As necessity demands further apparatus will be added.

MUSEUM.

The Museum contains varied collections of fauna and flora and minerals, all of which are freely used in instruction. The Mineralogical Cabinet contains over 6,000 specimens, including not only very full suites of the more common and more important minerals, but also good specimens of many of the rarer minerals. The collection in Lithology numbering 3,000 specimens, and of iron in Metallurgy, have, by recent additions, become fairly representative in the most important departments of these sciences. The Botanical collection of 6,000 specimens,

mainly presented by Miss Elizabeth C. Morris, of Germantown, Pa., is well arranged and contains a full representation of American Flora. A beginning has been made of a Chemical Museum—to contain specimens of raw and manufactured materials in chemical industries. Friends of our institution can greatly aid us by making additions to these collections.

BUILDINGS.

Pennsylvania Hall, erected in 1836-38, was remodeled and improved in 1889. It contains eighty-six rooms for students, many of them *en suite*, so that those who may wish to do so can have separate study and sleeping rooms. In this building are also the reading rooms of the Literary Societies and the auditorium used by the College Y. M. C. A. These rooms are all heated by steam and lighted by electricity. Sinks with running water are located on every floor, and on the first and third floors are complete lavatories with hot and cold water connected with the College system of water-works.

McKnight Hall, erected in 1897, is a dormitory building of three stories accommodating about fifty students. It is named in honor of Harvey W. McKnight, D.D., LL.D., Class of 1865, Fourth President of the College. It is finished entirely in hard wood, is heated by steam, lighted by electricity, has hot and cold water on each floor, and lavatories in convenient places. The first floor has eight rooms, each with open fire place, tile hearth, and spacious closets. These rooms may be used by one or two occupants, as preferred. On the second floor all rooms are *en suite*, each suite consisting of a study with one bedroom or two. These are also provided with hearths, closets, etc. The third floor is divided into sixteen single rooms.

Cottage Hall was built in 1856 as a double house for professors. In 1914, because of the great need for more dormitory accommodations due to the increase in the

number of students, it was transformed into a College dormitory of thirty rooms. As it is very advantageously situated on the campus near the main gateway, and is fitted up with all modern conveniences, rooms in this building are among the most desirable to be had.

Glatfelter Hall, erected in 1888-89, is used for general college purposes. It is named in honor of the late P. H. Glatfelter of Spring Grove, Pa., a trustee, who with his family has contributed largely to the College. On the first floor are the library and reference rooms, the President's and Registrar's offices, and recitation rooms. The second floor contains five recitation rooms, the biological laboratories, a drafting room, and a large Social Hall. A large museum and three recitation rooms are on the third floor. In the north wing of the third floor is the hall of the Philomathean Literary Society; in the south wing the hall of the Phrenakosmian Literary Society. In the basement are the laboratories of the Department of Physics with the recitation rooms directly above. The newly-equipped Engineering Laboratory and Shops occupy the entire north wing of the basement.

Thaddeus Stevens Hall, erected 1867-68, is a three-story brick building fronting on Carlisle street. The departments of Military Science and Tactics and Finance and Commerce are located in this building. It is heated by steam and lighted by electricity, and supplied with pure artesian water, hot and cold. On the first floor are class rooms, offices, and a toilet room. The second and third floors are used exclusively as a dormitory for students. On the second floor the rooms are separate, and a modern toilet and shower bath room has been provided. On the third floor they are arranged *en suite* with a broad archway separating the study and sleeping apartments. The rooms are furnished with book-cases, wardrobes, washstands, tables, chairs, and iron enameled beds complete with springs and mattresses.

The Athletic Field House is situated on the north-east corner of Nixon Athletic Field. This is a dormitory de-

signed especially for the use of the members of the College athletic teams and contains all the needed accommodations in the way of showers, hot and cold water, and so forth. The rooms are furnished with iron enameled beds complete with springs and mattresses, book-cases, wardrobes, tables, and chairs. The building is heated by steam and lighted by electricity.

The Brua Memorial Chapel, erected in 1889-90, is the gift of the late Col. John P. Brua, U. S. A., as a memorial to his parents. This building is used for daily prayers, for Commencement exercises, lectures and other occasions requiring a large audience room.

The Chemical Laboratory is a frame building, erected in 1872 and in 1890 converted to its present use. It contains on one floor a large lecture room, an office, store-rooms, chemical-room, balance-room, and three laboratories—providing for two hundred and sixty persons working individually. The building is fitted with the most approved appliances; gas and water at each desk; there are ample hoods, a water-distilling apparatus and large sand bath, and other necessary apparatus. The balance-room contains balances set on pillars especially built for the purpose. In the basement and in the attic are store-rooms. On account of the recent large increase in the number of students an addition to the Chemical Laboratory was built in 1916.

The Astronomical Observatory, erected in 1875, is furnished with an achromatic telescope having an object glass of six and one-half inches, with a transit instrument, chronometer, and other astronomical appliances.

The Gymnasium has on the first floor ample dressing rooms and bathing facilities, and a baseball cage. On the second, or main floor, a class of sixty members can be accommodated for gymnastic drill. This floor is partly enclosed for basketball purposes. The selection of specialized apparatus in light and heavy gymnastics is varied and complete. The office, where all physical tests and measurements are taken, is also on this floor,

and is furnished with a full set of anthropometric apparatus. The gallery has a good seating capacity for spectators.

The Gymnasium is open every week day from 10 A. M. to 10 P. M., and the time is apportioned between regular class practice, general practice, and games.

The Boiler House supplies the steam required for heating all the College buildings.

Besides these buildings there are on the campus the President's house, four halls erected by Greek Letter Societies, and a house for janitors.

A professor's house, donated by Professor George D. Stahley, M.D., class of 1871, has been erected on College ground, corner of Carlisle and Stevens Streets.

Nixon Athletic Field. Immediately north of the College buildings is the athletic field, which is carefully graded and securely inclosed and covers an area of over seven acres. It affords room and facilities for all kinds of out-door sports. Recently the Blough running track has been built. To the west of the field more than a dozen tennis courts have been laid out by the students.

CLASS MEMORIALS.

As testimonials of their love for their Alma Mater and substantial tokens of gratitude for what she has done for them, the classes indicated below have donated memorials to her as follows:

Class of 1883. On the thirtieth anniversary of their graduation the members of this class donated \$500 to the College, the income from which is awarded annually, under the name of the Elinore Taylor Brewer Greek Prize, to that Sophomore who does the best work in the regular Greek class.

Class of 1893. On the twentieth anniversary of their graduation the members of this class presented the fine memorial gateway at the main entrance of the College campus. The approximate cost of this imposing and artistic structure was \$1500.

Class of 1899. On the fifteenth anniversary of their graduation the members of this class presented the furnishings of the class-room for the Department of Philosophy and Education and a departmental library for that department. This equipment, costing nearly \$600, was presented as a Class Memorial to their class-mate, the Rev. Jacob Hiram Straw, who died on the African mission field.

Class of 1902. This class presented the College a concrete walk extending from the entrance into South College Hall to the driveway in front.

Class of 1906. This class gave a concrete walk that runs across the entire front of Pennsylvania Hall connecting the various entrances.

Class of 1907. This class paid for the wiring of all the halls and rooms of Pennsylvania Hall for electric light.

Class of 1912. This class erected the handsome light post in the center of the campus, with its cluster of five large electric light globes, and put down a concrete walk extending from this central point to Pennsylvania Hall, much of the actual labor being done by the members of the class.

Class of 1913. The gift of this class was a concrete walk which extends from Pennsylvania Hall to Glatfelter Hall, connecting with the Gymnasium, and widening into a plaza in front of the entrance to Glatfelter Hall, with two handsome electric lamp posts on the two outer corners of the plaza. This class also put down part of the concrete walk in front of Thaddeus Stevens Hall.

Class of 1914. This class gave a concrete walk which reaches from the main gateway to the center campus light, together with three walks extending to Brua Chapel.

Classes of 1916 and 1917. These two classes presented a concrete walk reaching from Thaddeus Stevens Hall to the corner of Carlisle and Stevens streets. All labor of putting down this walk was done by the members of these classes.

STUDENTS' INTERESTS

LITERARY SOCIETIES.

Two literary societies are connected with the College, the Philomathean and the Phrenakosmian. These exert a remarkably favorable influence on the intellectual and social culture of their members. The exercises consist of essays, orations, debates, and music. The acquaintance with parliamentary law and the practice in clear thought and effective speech which are here gained, make these societies excellent schools in good citizenship. Each society has a spacious hall on the third story of Glatfelter Hall, conveniently and handsomely furnished. Their sessions are held every Friday evening. Every student should become an active member in one of these societies.

DEBATES AND ORATORICAL CONTESTS.

During the year there are debates between teams representing the different classes, also between teams of the literary societies. The College is also represented in the Intercollegiate Oratorical Union, being associated with Franklin and Marshall, Ursinus, Muhlenburg, and Swarthmore in an annual oratorical contest.

Y. M. C. A.

The Young Men's Christian Association of the College, the second one organized in the world, is an active agent in promoting religious interests among the students. Each Sunday morning and Thursday evening a public meeting is held, addressed by invited guests or students. Various Bible and Mission Study classes are organized in college classes, fraternities, and other special groups. A salaried Y. M. C. A. Student Secretary has general direction and co-operates with the officers and committees

of the association. The Woman's Leagues of Pennsylvania College have begun a campaign for the securing of \$30,000 towards the erection of a College Y. M. C. A. Hall to serve as a religious and social center for the student body.

LECTURES.

A series of free public lectures is delivered each year by members of the Faculty and others prominent in some field of general interest.

The Y. M. C. A. conducts at very reasonable cost a series of interesting lectures and musical entertainments. Occasional lectures or addresses by prominent men are delivered before the student body.

MUSICAL ORGANIZATIONS.

Active and well trained choral and instrumental musical organizations consisting of a band, an orchestra, a guitar and mandolin club, and a glee club, add to the pleasure of their members and of the audience at their public exhibitions. These clubs usually take a ten days' trip during the winter.

ATHLETICS.

The various college athletic sports, football, baseball, basketball, field sports and tennis, are well organized. They are recognized as an important part of college life and receive encouragement, but under such regulations as it is believed will prevent them from becoming a possible source of demoralization to the student body and from interfering with the primary work of the institution. The plan under which these sports are conducted gives the opportunity and encourages every student to take part regularly in some out-door exercise.

Students are permitted to participate in any or all branches of athletics unless parents or guardians have notified the Faculty to the contrary.

PRESS CLUB.

The chief aim of the Press Club is to bring the various interests of the College before the public through the daily papers.

PUBLICATIONS.

THE PENNSYLVANIA COLLEGE BULLETIN is published by the Faculty four times during the year.

"The Gettysburgian," under the control of the student body, is published weekly, and makes a specialty of College and alumni news. A room in McKnight Hall has been provided as an office for the editorial staff of the GETTYSBURGIAN.

"The Y. M. C. A. Hand-Book," issued at the opening of each college year, gives valuable information and suggestions to incoming students.

"The Spectrum," an annual publication by the Junior Class, contains pictorial representations of the College with its various organizations and surroundings, and useful information about students and alumni.

All the periodicals aim at enlarging the means of communication between the College and its graduates, former students, and friends. These enterprises are cordially commended to the patronage of those interested in the welfare of the institution.

STUDENT COLLEGE REPRESENTATIVES.

A Student entering Pennsylvania College of Gettysburg from another college is required to be registered as a student here for a period of one calendar year before he is permitted to take part in intercollegiate athletics.

Any student whose work, reckoned from the beginning of the semester, is reported to the Faculty at any time during the semester as being below Grade D in two or more courses, will be debarred (as long as this condition exists) from representing the College in any student organization.

ADDRESSES OF ALUMNI.


The College is anxious to keep in touch with its alumni and ex-students not graduates, and requests that all changes in address be sent to the Registrar.

TEACHERS.

The attention of school boards, and others desiring teachers is called to the fact that it is frequently in the power of the Faculty to recommend suitable candidates. Many graduates successfully fill important positions in public and private institutions. The College course for teachers is arranged to meet the requirements of the School Code of Pennsylvania, thus securing the State Life Certificate for the graduates of the College. See page 73.

FORM OF BEQUEST.

I give, bequeath, and devise to "The Trustees of Pennsylvania College, of Gettysburg, in the County of Adams," in the State of Pennsylvania, and their successors and assigns forever, the sum of —— (or shares in the bank of ——, or any other personal property or real estate, as the case may be), to be applied to the Endowment Fund of the Institution.

 A bequest to a benevolent corporation, to be legal, must be made, in Pennsylvania at least thirty days, and in New York at least sixty days, before the death of the Testator; and should be signed by two witnesses not officially related to the College.

ALUMNI ASSOCIATIONS.

The Alumni Association of Pennsylvania College holds its regular annual meeting Wednesday afternoon of Commencement Week. In 1876 the Board of Trustees granted the Association the privilege of nominating six of their number to membership in the Board, and of maintaining this number as vacancies occur.

The officers of the association are:

President:

HON. DONALD P. MCPHERSON, '89..Gettysburg, Pa.

Vice Presidents:

CHARLES J. FITE, '98Pittsburgh, Pa.

PROF. CHARLES H. HUBER, '92.....Gettysburg, Pa.

HIRAM H. KELLER, ESQ., '01... ..Doylestown, Pa.

Secretary:

CLYDE B. STOVER, '94.....Gettysburg, Pa.

Treasurer:

EDGAR A. CROUSE, '03Gettysburg, Pa.

The various district alumni associations are active and potential factors in promoting the interests of the College and bringing the College to the notice of prospective students.

GETTYSBURG ACADEMY

This is a boarding school offering a four year course for students preparing for college and also a general or academic course for students who do not expect to enter college. As a training school for boys Gettysburg Academy seeks to cultivate habits of neatness and punctuality as well as industry and accuracy in study. It attaches the greatest importance to the culture of the heart and to the development of those manly virtues that make the truly Christian gentleman. The location, equipment, environment and ideals of the school are favorable for such training.

HOME LIFE.

It is the purpose of those in charge to give every student a happy, healthful home life. The Masters live in the school with the boys and are intimately associated with them both in their work and in their play. The large Living Room with its cheerful fire-place and comfortable furnishings is the gathering place of the boys when not on duty. Here is cultivated the "family spirit" of the school.

THE MAIN BUILDING.

A fine new structure known as The Main Building is now completed and occupied. This building is of beautiful, Colonial architecture and fronts one hundred and fifty-six feet on Carlisle Street. Into its construction and equipment have gone the very best and latest ideas that science, sanitation and school experience can give. The building is heated by a vacuum steam system from the central plant and lighted thruout by electricity. The plumbing is of the most approved sanitary design.

The first floor contains large, airy class-rooms, lavatory with hot and cold water supply, shower baths and a locker-room. There are also a number of rooms for students.

The second or main floor contains the large Living Room beautifully finished in Colonial style with an ample fireplace, tiled floor and comfortable furnishings. This provides a useful and delightful center for the school life. To the south of this is the large Chapel and Study Hall. Here are held the religious exercises, the literary society meetings and certain study periods. To the north is the Dining Hall with a capacity of one hundred boarders. Here the Masters and students take their meals together. On this floor is also the modern sanitary Kitchen equipped with the best devices and machinery for the preparation of food. The table is abundantly furnished with wholesome, well-cooked food fresh from the rich farming and fruit country of the vicinity. Only pasteurized milk and cream is served; only pure filtered water and manufactured ice is used. The excellence and cheapness of food supplies in Adams County make it possible to furnish a very good table at very low rates. Near the Living Room are the office of the Headmaster, a study-hall for girls who attend as day students, and a cozy reading room. The reading room is supplied with a large number of magazines and papers and is open every day for the use of the students.

The entire third floor contains rooms for the students and Masters. There are single and double rooms. On this floor there is another lavatory with hot and cold showers, drinking-font, and all modern toilet conveniences.

ADMISSION TO COLLEGES.

Gettysburg Academy is an accredited secondary school. All colleges admitting students by certificate accept its scholarship credits for entrance. This means

that a student satisfactorily finishing a course at Gettysburg Academy will be admitted without examination to Pennsylvania College at Gettysburg or to any other first grade institution admitting by certificate.

COURSES OF STUDY.

There are two courses, the Classical (with Greek), and the Scientific or Academic (with French or German) ; for detailed description of these courses see the special Academy catalog.

STUDENT OUTFIT.

All the boys except day students from the local community are required to room and board in the school. Each student will need the following outfit: Bible, four sheets, three pillow-cases, pillow, blankets, spread, towels, bath-robe, napkins, napkin-ring, fountain pen, and laundry bag (marked G. A.) All articles to be sent to the laundry should be plainly marked with the student's name.

The rooms are furnished with single beds, springs, felt mattresses, study table, chairs, book-case, chiffonier and window shades. A large closet is provided for each occupant. The only furnishings to be supplied by the student are a rug (9 x 12) for the floor and an electric desk lamp with cord.

SCHOLARSHIPS AND AID FOR STUDENTS.

A limited number of service scholarships worth \$30 each are awarded annually to deserving students by the Finance Committee of the Board of Trustees. Applications for these scholarships must be made in writing and should state in full the reasons for the request. Such applications must be handed to the Headmaster before October 1 of the school year. The children of clergymen are allowed a reduction of one-half of the tuition, that is, \$37.50 each school year.

The Parent Education Society of the General Synod controls ten scholarships worth \$30 each annually which

are open to young men preparing for the ministry in the Lutheran Church. Application for the use of these scholarships should be made to President John A. Singmaster, D.D., Gettysburg Theological Seminary, Gettysburg, Pa.

Rev. Sidney E. Bateman, M.D., ScD., Class of '87, of Philadelphia, Pa., has established an endowment fund of \$500, the income from which is awarded annually as a scholarship to some worthy and needy student preparing for the ministry in the Lutheran Church. Application for the use of this scholarship should be made to the Headmaster of the Academy.

EXPENSES.

The rate for boarding students for the full school year is \$300 or \$320 or \$340 according to the size and location of the room selected. The school year is divided into two equal semesters. Bills will be rendered at the beginning of each semester as follows:

	Lowest	Medium	Highest
	Rate	Rate	Rate
First Semester	\$150	\$160	\$170
Second Semester	150	160	170
Total	\$300	\$320	\$340

The amount of each semester bill is payable in advance at the beginning of the semester. As a matter of accommodation, however, payment for one-half of a semester bill will be accepted at the beginning of the semester, in which case the balance must be paid not later than the middle of that semester.

These charges cover tuition, board, furnished room, heat, electric light, pew rent, use of athletic field and tennis courts, gymnasium, library, reading room and athletic fees. The money received from the athletic fees (calculated at \$6 for each student) is administered by a committee composed of faculty and student members for the

benefit of the athletic interests of the school. There are no *extra fees*. It will therefore be seen that the cost of a course in Gettysburg Academy is much less than in the great majority of secondary boarding schools offering the same first-class advantages of instruction and equipment.

Each student upon reserving a room is required to deposit \$5 which will be credited on his first semester bill. He must also deposit \$1 to insure return of keys and care of the school property. Students responsible for damage to the school or student property are expected to report the same to the Headmaster who will make an equitable adjustment. Damage not so reported will be charged to the occupants of a room or in certain cases to the whole student body as circumstances may justify.

The tuition for day students is \$75 per school year including the athletic fee. The terms for payment are the same as for the boarding pupils.

The Academy catalog containing cuts of the buildings and detailed information will be mailed upon request to

THE HEADMASTER OF GETTYSBURG ACADEMY,
Gettysburg, Pa.

STUDENTS IN COLLEGE 1917—1918

GRADUATE STUDENTS. (NON-RESIDENT).

Bausch, Mary Martha	Bryn Mawr
Ikeler, Donald Fisher	Bloomsburg
Keefauver, Lloyd Conover	Cape May Court House, N. J.
Rosenberry, B. F. Loder	Easton
Taxis, Alfred L.	Harrisburg
Wert, Anne U.	Harrisburg

GRADUATE STUDENTS. (RESIDENT).

Bennett, Victor Wilson	Frostburg, Md.
Hashinger, William Kay	Coatesville
Kulp, Benjamin Frank	Factoryville
Rechard, Ottis Howard, Jr.	York
Spangler, John Elmer	Gettysburg

SENIOR CLASS

Candidates For the Degree of Bachelor of Arts.

P. indicates Pennsylvania Hall; M, McKnight Hall; C, Cottage Hall; F, Field House

	Group.	
Bare, Ethel Grace ✓	1	Sparrows Point, Md. 116 Carlisle St.
Bortz, Roland George	1	Apollo 205 P.
Creager, Harold Luther	1	Gettysburg 248 Baltimore St.
Deardorff, Eva Clare ✓	2	Gettysburg 116 Carlisle St.
Deibert, Allyn Thomas	2	Washington, D. C. 153 C.
Drawbaugh, Jacob Wilbur	1	Harrisburg 32 Stratton St.
Fisher, Nelson Franklin	1	Milton 427 P.
Floto, Max Crawford	2	Connellsville 260 C.
Gauger, William Clarence	3	McEwensville 103 P.
Gotwald, Luther Alexander	1	York 262 C.
Hamme, John Alfred	2	York 261-3 C.
Herman, Clyde Henry	1	York 226 P.
Knubel, Frederick Ritscher	1	New York, N. Y. 161 C.
Musselman, Helen Nunemaker	2	Gettysburg 247 Baltimore St.
Noll, Ruth Marie ✓	1	Gettysburg Carlisle St.
Ricker, Charles Cyrus	1	Huntingdon 258 C.
Saul, Harry Luther	1	Trenton, N. J. 410 P.
Secrist, Mark Howard	2	Hanover 217 P.
Smeich, Earl Allison	1	York 305 P.
Snider, Verl Eugene Cluts	1	Taneytown, Md. 107 P.
Stonesifer, Wade Earl	1	Emmitsburg, Md. 302 P.
Wagner, Ralph LaShelle ✓	1	Gordon 124 P.
Weaver, Lorna Jeannette	2	Gettysburg 66 W. High St.

Candidates For the Degree of Bachelor of Science.

Barbehenn, John Berthold	4	Jersey City, N.J.	218 N. Stratton St.
Brown, Harry Alvin	5	Thomasville	303 P.
Buffington, Chester Miles	9	Harrisburg	154 C.
Clemens, Arthur Knisely	6	Steelton	117 Springs Ave.
Croll, John, Jr.	5	Middletown	337 M.
Duff, Stewart Emmons	6	Altoona	331 M.
Ernest, Jay Blair	6	Mifflintown	158 C.
Finn, Howard Nelson	4	Hop Bottom	117 Springs Ave.
Gehauf, Bernard	4	Frostburg, Md.	360 C.
Gingrich, Luther Raymond	9	Waynesboro	359 C.
Harper, William Butler	4	Martinsburg, W. Va.	233 M.
Heimer, Roger Clarence	7	Thurmont, Md.	162 C.
McCreary, Ralph Work	4	Indiana	253 C.
McNabb, Wallace Morgan	4	Belleville	360 C.
Matter, Lawson Deacon	8	Harrisburg	154 C.
Mizell, Russell Francis	4	Gettysburg	Harrisburg Road
Orr, James Carlyle	4	Indiana	347 M.
Power, Edmund Emanuel	7	Gettysburg	316 Baltimore St.
Rouzer, Harvey Webster	4	Gettysburg	1 Delap Ave.
Sachs, George Amos	4	Gettysburg	325 Hanover St.
Scheffer, Louis Kossuth	8	Harrisburg	348 M.
Sheffer, Paul Ritchie	4	Fairfield	202 Chambersburg St.
Shockey, Ralph Irl	4	Waynesboro	360-2 C.
Shriver, Ralph Edwin	4	Chambersburg	322 P.
Snyder, Arthur Kenneth	4	Vandergrift	337 M.
Snyder, Charles Franklin	5	Millersburg	211 P.
Wells, Hibbert Preston	10	Chester Springs	218 P.
Wible, Charles McCreary	5	Gettysburg	Gettysburg R. D. 3 Seniors, 51.

JUNIOR CLASS**Candidates For the Degree of Bachelor of Arts.**

Group.			
Apple, John Adam	2	Sunbury	141 M.
Baker, Ralph Wolf	1	New Oxford	221 P.
Bortner, Minnie May	2	Glenville	218 N. Straton St.
Clouser, Paul Russell	1	Harrisburg	137 M.
Drawbaugh, Herman Zinn	3	Camden, Ind.	146 M.
Faust, Martin Luther	2	Ambler	204 P.
Grove, Elwood Martin	1	Red Lion	111 P.
Hagedorn, Ivan Henry Carl	1	Philadelphia	121 P.
Hankey, Ralph Lee	2	York	206 P.
Hilner, Howard Kauffman	1	Harrisburg	119 P.
Himes, Donald Eugene	1	Pittsburgh	221 P.
Huffer, Ralph Singleton	1	Burkittsville, Md.	401 P.
Keller, Lloyd Monroe	1	Shrewsbury	218 P.
Kopp, Curvin Franklin	2	York	418 P.
Lybarger, Donald Fisher	3	Reading	204 P.
Miller, Harman Frederick	1	Baltimore, Md.	125 P.
Miller, John Bringman	2	Spring Grove	118 P.
Miller, Robert Sheridan	1	Johnstown	123 P.
Mummert, Lewis Jacob	1	Hanover	118 P.
Olinger, Lavinia Ruth	2	Gettysburg	34 W. Middle St.

Pfeffer, Mary Ellen	2	Gettysburg	Steinwehr Ave.
Redcay, William Harold	1	Hanover	420 P.
Rutherford, William Harold	1	Lansdowne	347 M.
Schmidt, Frederick John	2	Philadelphia	363 C.
Shindler, Raymond Clayton	1	York	412 P.
Sieber, William Thomas	1	McAlisterville	418 P.
Snyder, John Houston	1	Carlisle	228 Chambersburg St.
Stamm, Raymond Thomas	1	Milton	427 P.
Stine, Ralph Edward	1	York	408 P.
Stock, Earl Kresge	3	Wyoming	418 P.
Yund, Roy La Verne	1	New Kensington	207 P.

Candidates for the Degree of Bachelor of Science.

Anderson, Dudley Hulings	6	Kittanning	226 P.
Beckmeyer, Grund Frederick	5	York	227 P.
Blocher, David	6	Gettysburg	28 W. Middle St.
Brenneman, James Alexander	6	Freeport	242 M.
Christ, Bruce Levi	4	Pine Grove	120 P.
Diehl, John	6	Greencastle	320 P.
Dippel, Harry Weber	4	Jersey City, N. J.	318 P.
Fleck, George Slayman	6	Altoona	31 W. Water St.
Flenner, Albert Lawrence	4	Tyrone	417 P.
Gilliland, Samuel Alexander	4	Gettysburg	239 Carlisle St.
Hartley, Mahlon Artman	10	Gettysburg	301 Carlisle St.
Heffiehnger, David Mitchell	4	Progress	201 P.
McDonnell, Carroll Richter	7	Gettysburg	140 W. Middle St.
McNitt, Allen Cummins	10	Lewistown	212 P.
Menchey, Albert John	4	Gettysburg	63 W. High St.
Miller, George Reich	4	Harrisburg	245 M.
Moyer, Clifford Zendt	6	Souderton	242-4 M.
Oyler, Ralph Ziegler	4	Gettysburg	218 York St.
Plank, John Earl	7	Gettysburg	32 E. Middle St.
Reinecker, Haydn Plank	4	Gettysburg	359 York St.
Shutter, Clarence	6	Steelton	240 M.
Stallsmith, Maurice Charles	4	Gettysburg	132 E. Middle St.
Stambaugh, Frederick Michael	10	Hanover	125 P.
Sunderman, Frederick William	4	Juniata	324 P.
Taylor, George Cornwell	9	Gettysburg	19 E. High St.
Witherow, Harry Minnick	9	Taneytown, Md.	417 P.
Wohlfarth, John Casper	8	Harrisburg	245 M.
Yarrison, Byron Wordsworth	5	Montgomery	245 M.
Juniors, 59.			

SOPHOMORE CLASS

Candidates For the Degree of Bachelor of Arts.

Group.			
Baker, Caroline Maude	2	Lancaster	109 York St.
Belknap, Carlisle Parks	3	Jamestown, N. Y.	412 P.
Bingaman, Frank Warren	2	Esterly	312 P.
Bousum, Jacob St. Clair	1	York	304 P.
Eisenhart, Russell Martin	1	York	202 P.

Fleck, Cyrus Stoner	3	Riegelsville	257 C.
Garman, Walter Earl	1	Reisterstown, Md.	258 C.
Hafer, Glenn Teeter	1	Chambersburg	322 P.
Klinefelter, Walter	1	Glen Rock	220 P.
Lampe, Russell Franklin	3	Altoona	138 M.
Miller, Guy Edward	1	Newville	219 P.
Mitchell, Herbert Scott	2	Apollo	312 P.
Morgart, Margaret Virginia	2	York	209 N. Washington St.
Neal, Clarence Arthur	1	Waynesboro	359 C.
Peeling, James Hedley	2	York	412 P.
Putman, Dwight Frederick	1	Somerset	321 P.
Rice, Mary Elizabeth	2	Arendtsville	306 N. Stratton St.
Robinson, Felix Griffin	1	Accident, Md.	157 C.
Rockey, Walter Wellington	2	Stone Harbor, N. J.	159 C.
Rudisill, Harold Becker	2	Hanover	202 P.
Schwartz, Perry Dean	2	York New Salem	203 P.
Schwartz, Wayne Timalium	2	York New Salem	203 P.
Senft, Grace Rebecca	2	Littlestown	130 Baltimore St.
Shearer, John Dwight	3	York Haven	219 P.
Sternat, Henry Wich	1	Towson, Md.	304 P.
Stewart, Margaret Armstrong	2	Gettysburg	228 Baltimore St.
Stoner, Mildred Minerva	2	Gettysburg	129 Baltimore St.
Stricker, Wm. Jennings Bryan	3	Robesonia	405 P.
Wagner, John Hoy	1	Pottsgrove	122 P.
Woodward, Luther Ellis	1	Walnut	326 P.
Worley, William Carson	1	Lititz	320 P.
Yiengst, Kirby Mahlon	1	Myerstown	108 P.

Candidates For the Degree of Bachelor of Science.

Adams, Harvey Raymond	6	Gettysburg	Seminary Ridge
Andrews, Robert	7	Harrisburg	233 M.
Boyson, John Evans	6	Harrisburg	245 M.
Browning, Ralph Avery	4	Myersville, Md.	236-8 M.
Buedinger, William Anton	4	Jersey City, N. J.	318 P.
Cash, Truman Buckey	6	Westminster, Md.	222-4 P.
Fellenbaum, Austin Habecker	6	Mount Joy	402 P.
Fisher, Luther Russell	4	Clearfield	101-3 P.
Gillette, Eugene Merle	7	Vineland, N. J.	358 C.
Griest, Harold Mahlon	4	Philipsburg	129 N. Washington St.
Harbaugh, Wilfred Le Cron	5	Waynesboro	363 C.
Hess, Paul Lower	6	Red Lion	111 P.
Hulsizer, John Edward	5	Woodcliff, N. J.	261 C.
Kattenhorn, Christian Charles	4	Newark, N. J.	318 P.
Lee, James Carroll	10	Everett	323 P.
Miller, Maurice Harry	4	Gettysburg	80 Steinwehr Ave.
Miller, Morell Waldo	5	Abbottstown	303 P.
Miller, Percy Edwin	4	Chambersburg	305 P.
Minick, William Leon, Jr.	9	Waynesboro	254 C.
Noon, Russell, Alleyne	5	Listie	235-7 M.
Pfeffer, Fred George	4	Gettysburg	330 Baltimore St.
Reen, Calvin Gilbert	7	Gettysburg	144 Springs Ave.
Schrite, J. Ellsworth	6	Mount Joy	402 P.
Sharetts, John Lloyd	5	Gettysburg	34 E. Stevens St.
Sheads, Robert Emory	7	Gettysburg	115 N. Stratton St.
Sheely, Glenn Francis	4	Gettysburg	Harrisburg Road

Sherer, Clayton Millard	10	Manheim	207 P.
Slanker, Harry Washington	4	Gordon	127 P.
Spangler, Jacob Monroe	6	East Berlin	236-8 M.
Trundle, Alfred Graham	5	Frederick., Md.	111 P.
Williams, Henry Jacob	6	New Freedom	424 P.
Zarr, Robert Rush, Jr.	4	Nanticoke	242 M.

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FRESHMAN CLASS**Candidates For the Degree of Bachelor of Arts.**

Group.			
Albig, John William, Jr.	2	McKeesport	410 P.
Brill, Lewis Remsburg	1	Sharpsburg, Md.	428 P.
Campbell, Carl Merritt	3	Hagerstown, Md.	425 P.
Coble, Oliver Dewey	1	Williamson	411 P.
Cook, Roderick Walker	2	Dillsburg	301 P.
Cooper, Harry Bowman	3	Camp Hill	238 M.
Falkenstein, Elwood S.	1	York	306 P.
Grinder, Genevieve Mindelle	2	Gettysburg	132 Hanover St.
Hershey, Charles Edward	1	York	227 P.
Hildebrand, Clinton Frederick	1	York	106 P.
Hollinger, Edith Deardorff	2	Gettysburg	Newville Road
Houser, John Raymond	1	Ruffsdales	419 P.
Huey, Harry William	1	Elizabeth, N. J.	358 C.
Kaltrider, Le Roy	1	Brodbecks	117 P.
Kerchner, Adelaide Marion	1	Lineboro, Md.	218 N. Stratton St.
Kirschke, Charles Ferdinand	1	Baltimore, Md.	344 M.
Lauver, Marie Nayetta	2	Altoona	209 N. Washington St.
Lind, Ralph Winfield	1	Altoona	225 P.
Lingenfelter, Rae Christine	2	Altoona	90 E. Stevens St.
Little, John Harold	1	Hanover	301 P.
Livengood, William Potts	2	Birdsboro	326 P.
Miller, Anna Harriet	2	Gettysburg	536 Baltimore St.
Mogel, Charles Luther	1	Markelsville	424 P.
Myers, George Israel	1	Seven Valleys	411 P.
Rank, Allen Walter	3	Williamstown	218 P.
Redcay, Paul Irvin	1	Hanover	420 P.
Rice, John Stanley	3	Arendtsville	146 M.
Ruthfuss, Charles Howard	1	Montoursville	226 P.
Rowe, Harlan H.	1	Halfway, Md.	402 P.
Shaulis, Samuel Sylvester	1	Somerset	321 P.
Sheads, Ida Salome	2	Gettysburg	115 N. Stratton St.
Sheely, Edith Irene	2	Gettysburg	143 Springs Ave.
Showe, Lawrence Martin	1	Mason-Dixon	428 P.
Springer, John Herbert	2	Harrisburg	137 M.
Stambaugh, Ernest M.	1	Elliottsburg	208 P.
Waldkoenig, Arthur Christian	1	Baltimore, Md.	344 M.
Young, Henry Beck	1	Hagerstown, Md.	425 P.

Candidates For the Degree of Bachelor of Science.

Baker, Walter Joseph	5	Portage	301 P.
Baum, Paul Donkel	4	Lemoyne	319 P.
Beers, George Lisle	10	Indiana	354 C.
Bigham, Charles Andrew	6	Gettysburg	Gettysburg R. D. 3

Boath, William Frederick	4	Harrisburg	312 P.
Bortner, Ralph Adam	4	Glen Rock	117 P.
Bowers, Ralph Firestone	5	Harmony Grove, Md.	241 M.
Burgess, Milton Valentine	9	Connellsville	328 P.
Dauber, Stanley Woodward	4	West Berwick	223 P.
Davies, Lewis Watkin	7	Berlin, N. Y.	253 C.
Douglas, Glenn Elwin	6	Vineland, N. J.	353 C.
Drawbaugh, Marie Perry ✓	6	Gettysburg	32 Stratton St.
Eberts, Dunbar Allen	6	Harrisburg	162 C.
Etsheid, Karl William	4	Lemoyne	319 P.
Frontz, Maurice Clinton	5	Huntingdon	343 M.
Gardner, Glenn Markley	6	Gettysburg	54 York St.
Gehauf, Hubert Hensey	7	Frostburg, Md.	357 C.
Hamil, Charles Aden	7	Frostburg, Md.	104 P.
Harbaugh, Raymond Welty	4	Buena Vista Springs	208 P.
Hinman, Burton Louis	9	Westville, Conn.	133 M.
Houtz, Harold Adam	4	Bellevue Park	F.
Ikeler, Earl Raymond	5	Bloomsburg	223 P.
Johnston, Burrell Elrod	6	Greensburg	347 M.
Keiser, Leon Paul	6	Mifflintown	158 C.
Kerr, Horace J.	10	Buffalo, N. Y.	241 M.
Klinedinst, Herman Wagner	4	York	160 C.
Lehman, Mark	10	Greensburg	133 M.
Lippy, John David, Jr.	4	Gettysburg	47 Chambersburg St.
Long, Max Dewey	6	Dauphin	424 P.
McCreary, Harry Clay	4	Indiana	253 C.
Marietta, Frederick Keck	4	Connellsville	328 P.
Martz, Harold Brehm	6	Harrisburg	134 M.
Metzger, Howard Luther	5	Myersville, Md.	307 P.
Miller, Carl Franklin	4	Juniata	306 P.
Miller, Charles Kitzmiller	4	Gettysburg	536 Baltimore St.
Mock, Martin Luther	4	Sheridan	411 P.
Mumma, Paul Fisher	10	Waynesboro	254 C.
Mumper, John Harold	9	Gettysburg	536 Baltimore St.
Mundorff, Roy McClellan	7	Gettysburg	Centre Square
Nicely, John Harris	4	Montoursville	423 P.
Oyler, Hubert Levi	4	Gettysburg	148 Stratton St.
Patterson, James Thornton	7	Cumberland, Md.	401 P.
Power, Genevieve Agnes ✓	4	Gettysburg	316 Baltimore St.
Seaman, Lloyd Miller, Jr.	7	Stone Harbor, N. J.	241-3 M.
Shank, John Jay	4	Waynesboro	138 M.
Shoop, Edwin Louis	4	Gettysburg	Seminary Ridge
Smith, Roy William	9	Dillsburg	318 P.
Spangler, George William	6	Harrisburg	134 M.
Starr, Allen Edward	7	Littlestown	Broadway
Treadwell, Edwin Wesley	6	Williamsport	343 M.
Wagner, Charles Shakespeare	10	Harrisburg	233 M.
Wallick, Raymond Grim	4	York	407 P.
Weaver, William Greenberry	6	Gettysburg	261 Baltimore St.
Weikert, John Maurice	9	McKnightstown	216 Chambersburg St.
Wetherow, William Washington	4	Gettysburg	8 Chambersburg St.
Yoshikawa, Masanori	4	Yamada, Hyuga, Japan	426 P.
Ziegler, Earl Emerson	4	York	345 M.

Freshmen, 94.

Partial Course Students.

Albright, William John	Middletown	245 M.
Baker, George Bush	York	423 P.
Bantley, David Straub	Scalp Level	345 M.
Bickell, Ernest Matthias	Arendtsville	201 P.
Blocher, Charles Huber	Gettysburg	Carlisle St.
Book, John Edward	Harrisburg	342 M.
Braunstein, William Peter	Union Hill, N. J.	259 C.
Brown, Carl Cresswell	Greensburg	133 M.
Bruederly, Minnie Catherine	Lancaster	W. Stevens St.
Buhrman, Samuel Ross	Rouzerville	417 P.
Campbell, Ralph Gaghagan	Butler	133 M.
Carlson, Oscar Wilhelm	McKeesport	N. Washington St.
Cofrances, Louis William	New Haven, Conn.	341 M.
Doty, Eza Chalmers	Mifflintown	157 C.
Escalera, Emilio, Jr.	Vega Alta, Porto Rico	335 M.
Evans, Raleigh Nelson	Harrisburg	245 M.
Fehrlin, Charles Richard	St. Gall, Switzerland	417 P.
Fisher, Sara Marie	Clearfield	131 N. Washington St.
Francis, Reginald Kiefer	Waynesboro	141 M.
George, Nicholas Anthony	Hartford, Conn.	341 M.
Hake, Anna Marguerite	Gettysburg	227 W. Middle St.
Haldeman,, Ward Franklin	Pine Grove	118 P.
Horner, Luella Oneida	Gettysburg	353 York St.
Huffard, Charles Lewis	Wytheville, Va.	327 P.
King, Edwin Jacob	Waynesboro	212 P.
Lauver, William Wieand	Altoona	225 P.
Lutz, Francis Creveling	Bloomsburg	262 C.
Macina, Louis de Raymond	New Haven, Conn.	342 M.
MacMillan, Margaret M.	Gettysburg	249 W. Middle St.
Marcus, Lloyd Leon	Harrisburg	335 M.
Mishler, Robert	Gettysburg	48 Chambersburg St.
Mumma, Richard Good	Steelton	241 M.
Newcome, John Nelson	Keyser, W. Va.	F.
Pfeffer, Helen Louise	Gettysburg	330 Baltimore St.
Phillips, Samuel Ellenberger	Harrisburg	233 M.
Porterfield, Hubert Lester	Hagerstown, Md.	425 P.
Rote, Harry Frederick	Harrisburg	117 Springs Ave.
Thompson, Raymond Jack	Butler	406 P.
Walker, Charles Willard	Somerset	237 M.
Widder, George McAllister	Harrisburg	117 Springs Ave.
Widman, Harry Frederick	West New York, N. J.	259 C.
Wilhide, Glenn Castle	Walkersville, Md.	406 P.

Partial Course, 42.

SPECIAL STUDENTS.

Allen, A. Jane	Morgantown, W. Va.	Baltimore St.
Back, Roscius H.		59th U. S. Inf.
Blank, Leslie Harold	Lima, Ohio	59th U. S. Inf.
Burdick, Victoria D.	Gettysburg	118 Carlisle St.
Dunbar, Leo A.		7th U. S. Inf.
Fiske, Newell R.		7th U. S. Inf.
Jones, Davis		7th U. S. Inf.
Keyser, Herman J.	Philadelphia	7th U. S. Inf.
Myers, Janet	Marion	154 York St.
Lefever, G. W.	Mechanicsburg	61 E. Middle St.
Reynolds, Walter Daniel	Gettysburg	128 N. Washington St.

Special Students, 11.

STUDENTS IN THE ACADEMY.

SUB-FRESHMAN CLASS

Alleman, Henry Snyder	Lurgan	103 M. B.
Bevan, Reginald Merivale	Paterson, N. J.	202 M. B.
Buehler, Guyon Edwards	Gettysburg	249 Carlisle St.
Cords, Arthur Albert	New Hampton, Iowa	319 M. B.
Deardorff, William Isaac	Occoquan, Va.	102 M. B.
Dimpsey, Frank James	New Freedom	113 M. B.
Donaldson, William Lawrence	Fairfield	103 M. B.
Eberman, Theodore Elmer	Baltimore, Md.	307 M. B.
Flamm, William	Baltimore, Md.	113 M. B.
Fogelsanger, Harold Harry	Chambersburg	302 M. B.
Foulk, Paul Levi	Littlestown	105 M. B.
Fuhrman, Arthur Alpheus	Hanover	113 M. B.
Gotwald, David Etter Small	York	319 M. B.
Gulck, George Krohn	Aalborg, Denmark	69 W. Middle St.
Heindel, Jeanne Swope	Gettysburg	218 Carlisle St.
Huber, Elizabeth Annan	Gettysburg	411 Carlisle St.
Mahaney, George Thomas	Sparrows Point, Md.	323 M. B.
McClain, Robert Daniel	Mt. Union	311 M. B.
McGinley, Wayne Lincoln	Waynesboro	
Miller, Charles Douglas, Jr.	Pottsville	315 M. B.
McMann, Ralph Howard	Sharpsburg	111 M. B.
Musselman, Mary Katherine	Fairfield	225 Springs Ave.
Papendick, Charles Louis	Eden, Md.	301 M. B.
Passell, Leon Brooks	Lock Haven	228 P.
Reller, Louis Smith	Pittsburgh	302 M. B.
Rudisill, John Calvin	Littlestown	325 M. B.
Rudisill, Donald Everett	Altoona	309 M. B.
Shelly, Paul Webster	Mechanicsburg	321 M. B.
Shoenberger, Alden Kresge	Pottsville	313 M. B.
Shumaker, Stella Barton	Harrisburg	127 N. Washington St.
Sieling, Charles Small	Railroad	325 M. B.
Woods, David Walker, Jr.	Gettysburg	R. R. 4

Sub-Freshmen, 32.

UPPER MIDDLE GLASS

Bowman, Arthur Loucks	Hanover	315 M. B.
Burger, Keith	Gettysburg	15 E. Middle St.
Congleton, Vernon Jerome	Baltimore, Md.	107 M. B.
Glenn, James Donald	Fairfield	Fairfield
Graham, Gordon William	Gettysburg	305 M. B.
Kelly, Allen Wilber	Taneytown, Md.	101 M. B.
Kommel, Brutus Albert	Monaca	109 M. B.
Mitchell, Howard John	Madera	304 M. B.
Myers, Philip Trone	Westminster, Md.	313 M. B.
Overmiller, Matthew Stanley	Quay East Prospect	301 M. B.
Plank, Clyde Anthony	Table Rock	Table Rock
Ridder, John Edward	Gormaniana, W. Va.	109 M. B.
Sachs, Harry Willis	Pittsburgh	111 M. B.
Wray, Alfred Townsend	Leechburg	311 M. B.

Upper Middlers, 14.

LOWER MIDDLE CLASS

Alleman, Benson Suesserot	Gettysburg	Confederate Ave.
Governale, Samuel Lentine	Wilkes-Barre	107 M. B.
Grimm, Emma Hermine Louise	Gettysburg	228 Carlisle St.
Heindel, Norman Hadley	Gettysburg	218 Carlisle St.
Lange, Frederick Shepard	Asbury Park, N. J.	305 M. B.
Miller, William Harold	Grantsville, Md.	321 M. B.
Oswald, LeRoy Seiler	Gettysburg	Broadway
Sadtler, Francis Carpenter	Philadelphia	305 M. B.
Sullivan Adrian Daniel	Passaic, N. J.	315 M. B.
Walter, Samuel Luther	Harrisburg	111 M. B.
Waybright, Walter Ernest	Littlestown	104 M. B.
Waybright, Howard David	Gettysburg	104 M. B.
Woolridge, Ashley Robert	Woodland	323 M. B.
Yensen, Jacob Roed	Aalborg, Denmark	102 M. B.
		Lower Middlers, 14.

1917 STUDENTS.*

Foulk, Paul Levi	Littlestown	105 M. B.
Jensen, Haakon	Philadelphia	315 M. B.
		Total in Academy, 61.

*Entered after publication of the 1916-1917 Catalog.

SUMMARY.

Number of Students in College 1917-1918.

Graduates	11
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Juniors	59
Sophomores	64
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COMMENCEMENT 1917

Salutatory.

Marjorie Louise Sheads

Commencement Orator.

Hon. J. Hay Brown, LL.D.,Lancaster, Pa.

Valedictory.

Henry Etter Starr

GRADUATES.

Bachelor of Arts.

Ashton, Morville	Kunkel, Norman Wilbur
Bausch, Frieda Bertha ✓	Lakin, Edmund Aldine
Bennett, Victor Wilson	Lentz, John Max
Bentz, Marie Elizabeth	Loudenslager, Paul Edward
Bink, Howard Frank	Maxwell, David Elias
Bookhultz, George Elmer	Miller, Luther Paul
Braunlein, John Howard	Peters, William Howard
Brenneman, Willis Raymond	Ringler, Alexander Preston
Carlson, Raymond Albert	Rost, Lawrence Eugene
Diller, Charles Slagle	Schillinger, George William
Duncan, Charles William	Sheads, Marjorie Louise
Embich, John Reigle	Sincell, Charles Morris
Fink, James Russell	Slifer, Luther Walter
Fisher, Henry Earl	Sowers, Lauran Delk ✓
Frommhagen, Frederick Karl	Spangler, John Allen, Jr.
Hallenbeck, Chester Traver	Taughinbaugh, Minerva Irene ✓
Hershey, Clarence Henry	Venable, Charles Leslie
Hesson, Raymond Luther	Watson, Edith Esther
Williams, Ira Alvin	

Bachelor of Science.

Bennett, John Crist	Huff, Myron Reed
Boyson, William Andrew	Lamont, Bruce Floyd
Bringman, Jay William	Mead, Leon Roy
Brumbaugh, Luther Truman	Ruth, Harry Foss
Campbell, William Clifford	Shearer, Roger Loucks
Cannen, James Vernon	Starr, Henry Etter
Daugherty, Davis Clifton	Stermer, Paul Ernst
Flenner, Robert Wareham	Stratten, Harry Theopholis
Geiser, John Dixon	Williams, Frank Billmeyer
Hatch, James Albert	Zane, Ida Dorothy ✓
Hixson, George Paul	Zeilinger, Albert Henderson

ADVANCED DEGREES.**Master of Arts.**

Robert Bruce Albert,	Scranton, Pa.
Charles Paul Cessna	Rainsburg, Pa.
Paul Snyder Creager,	Gettysburg, Pa.

Master of Science.

Chester Allen,	Gettysburg, Pa.
Victor Earl Amspacher,	Altoona, Pa.
Paul William Neu,	West Hoboken, N. J.
John Spangler Nicholas,	Washington, D. C.
Arthur Keller Waltz,	Bethlehem, Pa.

HONORS AND PRIZES.**GENERAL FINAL HONORS.**

Henry Etter Starr

HIGHEST CLASS HONORS.**Junior.**

Harold Luther Creager

CLASS HONORS.**Senior.**

Raymond Albert Carlson	Marjorie Louise Sheads
Frederick Carl Frommhagen	Henry Etter Starr
Ida Dorothy Zane	

Junior.

Allyn Thomas Deibert	Helen Nunemaker Musselman
Frederick Ritscher Knubel	Lawson Deacon Matter
Charles Cyrus Ricker	

Sophomore.

Martin Luther Faust	Raymond Thomas Stamm
Curvin Franklin Kopp	Ralph Edward Stine

Freshman.

Oscar Arthur Beyer	James Carroll Lee
Frank Warren Bingaman	Margaret Virginia Morgart
Harold Mahlon Griest	Clarence Arthur Neal
Mary Marguerite Hollinger	Dwight Frederick Putman
Calvin Gilbert Reen	

DEPARTMENTAL FINAL HONORS IN BIOLOGY.

William Andrew Boyson

DEPARTMENTAL FINAL HONORS IN CHEMISTRY.

Raymond Albert Carlson	Henry Etter Starr
------------------------	-------------------

GRAEFF PRIZE IN ENGLISH.

Henry Etter Starr

With Honorable Mention of

Ida Dorothy Zane

HASSLER PRIZE IN LATIN.

William Clarence Gauger

With Honorable Mention of

John Berthold Barbehenn

BAUM PRIZE IN MATHEMATICS.

Raymond Thomas Stamm

With Honorable Mention of

Raymond Harrison White

BREWER PRIZE IN GREEK.

William Harold Rutherford

With Honorable Mention of

Boyd Harold Deardorff

MUHLENBERG FRESHMAN PRIZE.

Clarence Arthur Neal

Dwight Frederick Putman

PRIZES IN DEBATE.

First Prize.

Donald F. Lybarger

Harman F. Miller

Robert S. Miller

Second Prize.

William C. Gauger

John M. McCollough

Harry L. Saul

HONORARY DEGREES**CONFERRED AT COMMENCEMENT 1917.****Doctor of Divinity.**

Rev. Henry Anstadt, Washington, D. C.
Rev. Albert Bell York, Pa.
Rev. G. Albert Getty, York, Pa.
Rev. Victor Miller, Hagerstown, Md.
Rev. Luther A. Weigle, Ph.D., New Haven, Conn.

Doctor of Laws.

Prof. A. C. McGiffert, D.D., Ph.D., New York City

Doctor of Literature.

James McConaughy, Philadelphia, Pa.

Doctor of Science.

Edgar M. Green, M.D., Easton, Pa.

Civil Engineer.

Charles A. Emerson, Jr., Harrisburg, Pa.

Master of Arts.

Aaron B. Hess, Chambersburg, Pa.

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